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Special Areas and Research Natural Areas

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Kootenai National Forest



Art by Frank Kujawa

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Special Areas and Research Natural Areas

Following is a description of the existing and recommended Special Areas and Research Natural Areas found on the Kootenai National Forest.

Special Areas

Introduction

Special Areas were identified for a wide variety of reasons. These areas are managed to emphasize recreational and other specific related values. Special Areas are classified as follows:

- **Botanical** – A unit of land that contains plant specimens, plant groups, or plant communities that are significant because of their form, color, occurrence, habitat, location, life history, arrangement, ecology, rarity, or other features;
- **Geological** – A unit of land with outstanding formations or unique geological features of the earth's development such as caves, fossils, dikes, cliffs, or faults;
- **Historical** – A unit of land possessing a significant site or a concentration of sites, buildings, structures, or objects, united historically or prehistorically by plan or physical development. Memorial areas are included in this definition;
- **Paleontological** – A unit of land that contains fossils of plants and animals, shellfish, early vertebrates, coal swamp forests, early reptiles, dinosaurs, and other prehistoric plants or animals;
- **Recreational** – A unit of land that has been administratively designated for particular recreation opportunities or activities such as hiking, rock hounding, recreational mining, photography, or other special activities;
- **Scenic** – A unit of land with outstanding natural beauty that requires special management to preserve this beauty;
- **Zoological** – A unit of land that contains animal specimens, animal groups, or animal communities that are significant because of their occurrence, habitat, location, life history, ecology, rarity, or other features.

Following is a brief description of each existing or recommended Special Area. A locator map and individual maps are found following the descriptions of the Special Areas and Research Natural Areas.

Existing Special Areas

Berray Cedars: The site is located in the South Fork Bull River at mid-elevation and contains a stand of large, very old western red cedars. The area contains approximately 86 acres (Botanical).

Hidden Lake: It contains a unique assemblage of low-elevation forest, ponds and lakes, wetlands, and sensitive plant species (small yellow lady's slipper, sparrow's-egg lady's-slipper, and round-leaved orchis), landforms, and geologic substrates. The area supports more sensitive plant populations than any other on the KNF. It is characterized by a series of narrow, northwest-southeast trending ridges separated by small drainages and basins. The bedrock, of alternating layers of softer and harder bedrock, has been tilted nearly vertically and was scoured by continental glaciers resulting in the softer rock being removed. The area burned in the early 1900s with the stand now composed of western larch, lodgepole pine, and Douglas-fir. There are three

lakes and two swampy areas that contain water. The area includes approximately 607 acres (Botanical).

Kootenai Falls: An archeological district with both historic and prehistoric values. It is located on both the north and south banks of the Kootenai River. The area contains a diverse set of historic-period resources representing railroading, a Chinese settlement, homesteading, and placer mining. The area is very important for traditional culture values. The area contains approximately 420 acres (Historical).

Lower West Fork Yaak Falls: There are two falls along the lower West Fork Yaak River shortly before it joins the Yaak River. Vegetation mostly includes older-aged Douglas-fir, western red cedar, western hemlock, and western larch depending on the aspect. Habitat types include Douglas-fir/pinegrass, western hemlock/queencup beadlily, subalpine fir/queencup beadlily. The bedrock is described as west-dipping argillite of the Wallace Formation located slightly east of the Yaak River Syncline. The area includes approximately 274 acres (Historical/Geological).

Northwest Peak Scenic Area: The area includes the high ridgeline setting and the upper, glaciated basins of West Fork Yaak River and American Creek in the northwestern-most corner of Montana. There are several small alpine lakes. Vegetation includes all the high, cold-habitat types and contains moderately open stands of trees that include subalpine larch, subalpine fir, whitebark pine, and Engelmann spruce. The KNF and IPNF share the area with 4,714 acres on the Kootenai side and 1,972 acres on the Idaho Panhandle side (Scenic).

Rexford Hoodoos: This is an erosional landform that has developed on a drumlin exposed as the Tobacco River reestablished its channel following glaciations. The “hoodoos” are developing in dense glacial till. The vegetation represents the droughty nature of the area. It is a very open stand of grass and trees. Habitat types include Idaho fescue/bluebunch wheatgrass, Douglas-fir/Idaho fescue, and rough fescue/Idaho fescue. The area includes approximately 83 acres (Geological).

Ross Creek Scenic Area: Located in the bottom of Ross Creek and containing a stand of large, old western red cedars. A .9 mile, self-guided trail winds through the stand. The trees are upwards of eight feet in diameter and 175 feet tall. The area includes sites referred to by descriptive names: “Cedar Chimney” the “Wrestlers” the “Fairy Den” the “Twins.” Ground fire has occurred in the area killing scattered trees and allowing enough opening for some other tree species to inhabit the area: western white pine, grand fir, Douglas-fir, and younger, smaller western red cedar and western hemlock. The area contains approximately 101 acres (Scenic/Historical).

Star Canyon: A steep-walled canyon at the mouth of Star Creek near the Idaho-Montana border; and is a surface reflection to the Leonia Fault. The area contains 100 percent sideslopes with areas of slide rock and cliffs. There are a series of waterfalls up to 40 feet in height. There is little vegetation in the canyon itself. Douglas-fir/pinegrass, Douglas-fir/kinnikinnick, western hemlock/queencup beadlily are the main habitat types depending on aspect or depth of soil. The vegetation is mostly old-aged stands of western hemlock, western red cedar, western larch, and Douglas-fir. The area contains approximately 81 acres (Geological).

Ten Lakes Scenic Area: It is composed of high alpine ridges with many lakes. The area is part of the Galton Mountains of the Whitefish Range. It was strongly glaciated by alpine ice. Vegetation is composed of alpine species reflecting a cold, moist climate. Mountain hemlock is common. There is a patented mining claim within the boundaries of the Special Area. The total acreage is 6,561, with 19 acres of patented mining claim (private) and 6,542 acres of Forest Service (Scenic).

Tenmile Talus: The prime features are the "Notch" in the topographic divide between Pinkham Creek and Tenmile Creek and the rock outcrops and talus debris found there. The area is a surface expression of the "Pinkham Thrust" fault. The notch was accentuated by glacial scour and water flowing through it during glacial melt. Vegetation includes subalpine fir/twinflower, subalpine fir/grouse whortleberry, Douglas-fir/pinegrass, and Engelmann spruce/twinflower. Where tree cover exists, it ranges from very open to dense composed of subalpine fir, Engelmann spruce, and lodgepole pine. Where vegetation exists on the lower slopes it is mostly grass. The area contains approximately 390 acres (Geological).

Upper Big Creek Riparian Ecosystem: The area is comprised of a low-gradient stream and the adjacent, gentle lands along the east and west branches of upper South Fork Big Creek. During glacial melt the area was a glacial lake with outlets to the south and the west. Two very obvious outlets are seen on the topographic divide with Everett and Gold Creeks. The soil material is mostly lacustrine silt. The vegetation is over eighty-five percent lodgepole pine with scattered subalpine fir and Engelmann spruce. The acreage is approximately 2,966 acres (Botanical).

Wood Creek Larch Scenic Area: The site is composed mostly of a pure, intact stand of large, old western larch. The topography is steep, mountainous slopes. The habitat type is subalpine fir/twinflower. The area contains approximately 115 acres (Scenic).

Yahk Mining District: Intact mining operation (1930 vintage). Originally a mining camp was established in the 1890s and was revitalized in 1910 and again in 1930. The 1910 Fire burned through the entire area. There are many adits and houses, two stamp mills, an assay office, shops, and a business office; in all, over 200 features. The area contains approximately 456 acres (Historical).

Recommended Special Areas

Bad Medicine: A very special area on the KNF. The area contains a surface expression of the Leona Fault – rocky cliffs, rockfall. The Fault has been studied by many geologists, including Willis Johns (1972) and is described as having had 26,000 to 32,000 vertical feet of movement in the vicinity of the Bad Medicine area. The rocky cliffs are the only occupied nesting habitat for the peregrine falcon (sensitive species) on the KNF. The area also contains sensitive plant species. The cliffs are one of, if not the largest, vertical relief-cliff areas on the Forest. It has important historical (traditional cultural) aspects. The area contains approximately 1,938 acres (Zoological/Historical).

Baree Creek: This site is located on the alluvial-fan area where Baree Creek joins Silver Butte Fisher River. The tree vegetation is composed of subalpine fir, Engelmann spruce, and lodgepole pine. It has important historical (traditional cultural) aspects. The area contains approximately 57 acres (Historical).

Barnum Wetlands: The area contains a wetland (marsh/wet meadow) as defined by Executive Order 11990. The soils are hydric; somewhat poorly drained and have a water table less than 0.5 foot from the surface for a week or more during the growing season. The vegetation represents Obligate Wetland Plants (almost always occur in wetlands), Facultative Wetland Plants (plants that usually occur in wetlands), and Facultative Plants (plants with the likelihood of occurring in both wetlands and non-wetlands). Sedges, rushes, willows, alders, and pink spirea are scattered throughout. The area contains approximately 227 acres (Botanical).

Barron Creek: The area includes the lands surrounding the mouth of Barron Creek as it enters Koocanusa Reservoir. Much of the area is underlain by lacustrine material deposited as the glacial

ice was melting and retreating. It has important historical (traditional cultural) aspects. The area contains approximately 326 acres (Historical).

Big Creek Face: The site is located on a glacially-scoured face adjacent to the south side of Big Creek bay and Koocanusa Reservoir. A stand of lodgepole pine intermixed with Douglas-fir and western larch covers much of the area. An understory of western red cedar and western hemlock is common, especially on the northeast aspect. The area was strongly scoured as glacial ice “flowed” from Canada. “Polished” rock outcrops can be seen scattered along the slope. It has important historical (traditional cultural) aspects. The area contains approximately 327 acres (Historical).

Bitterroot Point: One of the few areas on the KNF with the bitterroot flower. The site is on the north side of the Kootenai River on a southerly aspect. The plants are located mainly on the shallow soil, rocky ledges of the open slopes below Flagstaff Mountain between 3,000 and 3,800 feet elevation. It is an important gathering site for Native Americans. The site contains approximately 126 acres (Botanical/Historical).

Callahan Historic Mining & Logging District: A lot of “sites” related to early-day logging and mining activities lie all along Callahan Creek, including old railroad rail pinned to the canyon walls. The area contains approximately 3,262 acres (Historical).

Chicago Peak: Located just inside the Cabinet Mountains Wilderness in the headwaters of Copper Gulch and the drainage containing Cliff Lake. Chicago Peak is the main-named feature, but Milwaukee Pass, Copper Lake, and Cliff Lake are also included. The area has been alpine glaciated and includes such features as cirque basins and arêtes. The area contains approximately 278 acres (Historical).

Cody Lakes: A series of three small lakes at the head of Cody Creek within calcareous bedrock producing plant species consistent with calcareous soils. A thick organic mat fringes the lower lake. Important shrubs include bog birch, hoary willow, and small-leaved laurel. Major graminoids include slender sedge, few-flowered spikerush, beaked sedge, and mud sedge. It is habitat for northern bog lemming, a Northern Region sensitive species. The area contains approximately 194 acres (Botanical/Zoological).

East Fork Pipe Creek: Parallel, adjacent notches accentuated/created by outflow from glacial lakes ponded in the South Fork Big Creek as well as the east and west branches of the South Fork Big Creek. The area contains approximately 1,118 acres (Geological).

Falls Creek: Falls located within and adjacent to the western boundary of the Cabinet Mountains Wilderness. A high falls observed from west of Troy traveling on Highway 2 east to Libby. The area contains approximately 42 acres (Scenic/Geological).

Fivemile: A short, narrow canyon on the lower end of Fivemile Creek drainage. It has important historical (traditional cultural) aspects. The overstory vegetation is composed of Engelmann spruce and subalpine fir intermixed with western larch and Douglas-fir. The area contains approximately 80 acres (Historical).

Flower Lake: A small lake lying adjacent to east side of the Cabinet Mountains Wilderness. The landform is the result of alpine and continental glacial till colliding and leaving glacial debris that eventually formed a lake. The lake is surrounded by an organic floating fen that grades into an attached fen. It is referred to as a “poor” fen, which is characterized by a bryophyte layer

dominated by sphagnum and low surface-water pH (4.0-5.5). This site is an excellent example of a “poor” fen, a rare wetland type in Montana. It supports a boreal toad population as well as watershield, creeping sedge, English sundew, and pod grass. The area contains approximately 16 acres (Botanical).

French Creek Cedars: One of our finest examples of an “ancient,” old growth cedar grove in the southern end of the Purcell Mountains. The location of this grove is in the moist valley bottom of French Creek near many stream confluences, which has allowed this grove to survive multiple wildfires. This grove boasts abundant 50 plus inch diameter breast height western red cedar, and 40 plus inch diameter breast height western larch, many of which exceed 500 years of age. This is also the location of two rare moonwort species. It is the location of a control plot for a moonwort monitoring study. The area contains approximately 131 acres (Botanical).

Gateway Prairie: Remnant Palouse prairie. Idaho fescue/bluebunch wheatgrass and rough fescue/bluebunch wheatgrass cover types are present. Soils are neutral to slightly calcareous and have a mollic epipedon (dark surface). The area contains approximately 2,147 acres (Botanical).

Geiger Lakes: Located on the east side of the Cabinet Mountains divide just inside the Cabinet Mountains Wilderness boundary. The area incorporates all the upper basin of Lake Creek that contains the two Geiger Lakes. The area has been strongly glaciated and the lakes are nestled in two cirques. It has important historical (traditional cultural) aspects. The area contains approximately 578 acres (Historical).

Halverson Creek: Location of northern beechfern, a KNF sensitive plant species. Unlike the other locations on the Forest the site is similar to sites in Glacier Park (weeping rock walls). The area contains approximately 47 acres (Botanical).

Kelsey Creek: This site boasts three rare species in the moonwort genus, two of which are presently on the KNF sensitive list. The Kelsey Fire engulfed this site in 2000 and, without any human intervention; these populations (located in thick cedar duff) survived this wildfire. This event demonstrated how these three species may have a historic interaction with wildfire edge, and demonstrated the importance of “fire refugia” as habitat for rare plant species. Kelsey Creek is an existing Special Area and it is proposed that the present Special Area is enlarged, to the east, to include an additional population of trianglelobe moonwort and is also part of the “fire refugia” area. It is the location of a control plot for a moonwort monitoring study. The original area contains 17 acres, but with the proposed addition the total will be approximately 53 acres (Botanical).

Kenelty Caves: Only caves on KNF and they are located within the Cambrian Limestone Formation. There is a very small amount of Cambrian exposed on the KNF. Also, grotto-like features are seen in several above-ground sites. The area contains approximately 87 acres (Geological).

Kootenai Mountain: Located approximately one mile north of the Kootenai River just as it leaves the canyon between the towns of Libby and Troy. Kootenai Mountain is the highest topographic feature on the divide between Surprise Gulch and Koot Creek. It has important historical (traditional cultural) aspects. The area contains approximately 217 acres (Historical).

Little North Fork Falls: The area is located on the lower end of Little North Fork Big Creek just before it joins Big Creek. The site is a popular recreation area. It has important historical (traditional cultural) aspects. The area contains approximately 6 acres (Recreational/Historical).

Lost Horse Fen: The area is a unique peatland with a large, floating, sphagnum mat. Also, it is the location of one of two occurrences for Wulf's sphagnum in Montana. The KNF sensitive plant species, poor sedge, can be found here. This Special Area includes the upper wetland and the unique cliffs and outcrops above the fen. A population of the KNF sensitive plant species, Iceland-moss lichen, occurs near the fen. The area contains approximately 308 acres (Botanical).

Lower Bristow: The area surrounds the mouth of Bristow Creek as it enters Koocanusa Reservoir. The area contains deep deposits of glacial till as well as glacio-fluvial material. It has important historical (traditional cultural) aspects. The area contains approximately 371 acres (Historical).

Lower Stone Hill: Located along Koocanusa Reservoir (approximately 15 miles south of the Canadian Line). This portion of the Kootenai Valley becomes much narrower than further north. As the continental glacial ice moved down-valley the walls of the valley were strongly scoured leaving the area known as Stone Hill highly polished. It is located below Highway 37. The site has important historical (traditional cultural) aspects. The area contains approximately 81 acres (Historical).

Lower Sunday Creek Ecosystem: The area is located on lower Sunday Creek. The falls on Sunday Creek are within the boundary of the area. This is a riparian forest and swamp along lower Sunday Creek. The area supports a diverse, mixed-conifer forest with a swamp dominated by western red cedar and skunk cabbage, a unique feature on the eastern half of the KNF. It also supports old growth forest features. The area contains approximately 150 acres (Botanical/Historical).

Northwest Peaks Scenic Area: Additions would be made to both the Kootenai and the Idaho Panhandle portions of the Scenic Area. The additions include larger portions of the glaciated basins and several lakes and the boundary is extended to the Canadian Line. The area includes the high ridgeline setting and the upper, glaciated basins of West Fork Yaak River and American Creek in the northwestern-most corner of Montana. There are several small alpine lakes. Vegetation includes all the high, cold-habitat types and contains moderately open stands of trees that include subalpine larch, subalpine fir, whitebark pine, and Engelmann spruce. The addition will be approximately 8,533 acres (Scenic).

Pete Creek: The location of a significant population of northern beechfern. Old growth features occur along the stream channel including the presence of western red cedar and the slow-meandering sections of the channel. The area contains approximately 320 acres (Botanical).

Pinkham Falls: A narrow canyon on lower Pinkham Creek. The falls is the part of the drainage where the stream makes the turn from a northerly flow to a westerly flow to the Koocanusa Reservoir. There is western red cedar located in the canyon bottom. It has important historical (traditional cultural) aspects. The area contains approximately 21 acres (Historical/Geological).

Rock Creek Meadows: A significant meadow, wetland area in the head of Rock Creek. It lies adjacent to the west side of the Cabinet Mountains Wilderness. The area contains approximately 186 acres (Botanical).

Rocky Fivemile Forest: It includes a rocky-landform, spruce-fir forest at the headwaters of Lake Creek. There are many rock outcrops in the midst of late seral spruce-fir forest. The area also includes stringers of bedrock meadows, which lie on quartzite of the Ravalli Formation. The rock outcrops host a very rich and varied acid-loving lichen flora in many different microclimates.

Between the rock outcrop stringers is a chain of wetlands, which are dominated by large, coarse-beaked sedge. The rare, diminutive annual false mermaid and uncommon threeleaf *Lewisia* are also found. The presence of arctic-alpine species in the rock crevices of the area underlies the refugium-nature of the bedrock area. The area contains approximately 214 acres (Botanical).

Ross Falls: It is located on lower Ross Creek below Ross Creek Cedars. The falls is tucked in a narrow gorge with steep sidewalls and scattered vegetation on the rocky, southerly aspect. It has important historical (traditional cultural) aspects. The area contains approximately 44 acres (Historical/Geological).

Silver Butte Mountain: Located in the head of Silver Bow Creek, the area is mostly an upland meadow with minimal tree cover that faces to the east. It contains a lot of herbaceous vegetation. It has important historical (traditional cultural) aspects. The area contains approximately 170 acres (Historical).

Spar Springs: Subsurface outlet for Spar Lake. Spar Lake has no surface outlet and the spring area is recognized as the outlet for the lake. The flow from the springs is in the 60-80 cubic feet per second. The area contains approximately 196 acres (Geological).

Spread Otis Creeks: The location of a significant population of northern beechfern. This population is located on both sides of the Yaak River. The area contains approximately 382 acres (Botanical).

Stone Hill: The area is located along the Koocanusa Reservoir (approximately 15 miles south of the Canadian Line). This portion of the Kootenai Valley becomes much narrower than further north. As the continental glacial ice moved down-valley the walls of the valley were strongly scoured leaving the area known as Stone Hill highly polished. Site used for significant amounts of rock climbing. Used for training novice climbers. The area contains approximately 760 acres (Recreational/Geological).

Sutton Falls: A drainage flowing from the north into Sutton Creek that contains a very visible falls during the spring melt period. The topography is very steep and the falls has a drop of over 100 feet. The vegetation is sparse. A lot of bedrock is scattered along this aspect. The area contains approximately 113 acres (Historical/Geological).

Ten Lakes Scenic Area: The area incorporates most of the land between Grave Creek and the Canadian Line. Elevations range from 3,200 feet in the bottom of Grave Creek to over 7,800 feet on Green and Poorman Mountains. All of the area was glaciated, mostly by alpine ice, as evidenced by the cirque basins and lakes, the glaciated troughs, and the sharp mountains ridges. The landform facing into the Eureka Valley was largely influenced by continental ice. The area includes the landform known as Gibraltar Ridge. Much of the vegetation reflects a cooler/colder climatic influence: subalpine fir, Engelmann spruce, beargrass, grouse whortleberry and mountain hemlock. The Mediterranean influence extends up Grave Creek as evidenced by the stands of western red cedar. The Wigwam River and Blacktail Creek drain much of the northern portion of the area. These drainages flow into Canada where the water eventually joins the Kootenai River.

The area will include the Therriault Pass proposed Special Area (approximately 493 acres). This site is a prominent U-shaped feature on the skyline seen while traveling north on US Hwy 95 between Fortine and Eureka. It is a fault-notch that was scraped/gouged/expanded by ice backing to the west away from the main alpine lobe. The area contains approximately 8,403 acres (Scenic).

Tenmile Falls: A steep-walled canyon with a series of falls in the middle section (mostly below the junction of Briery and Tenmile Creeks) of the Tenmile drainage. There are a lot of talus and rock bluffs. The southeasterly aspect is mostly devoid of vegetation while the northwesterly aspect has moist species mixed in with the rock bluffs. It has important historical (traditional cultural) aspects. The area contains approximately 187 acres (Historical/Geological).

Tepee Lake: A beautiful lake with floating and anchored organic deposits. It is the only known location on the KNF and in Lincoln County for great sundew. The floating mat is dominated by a *dulichium* community. The site is a very good example of a “poor” (characterized by a bryophyte layer dominated by sphagnum moss and low surface water pH) fen. It is also home for buckbean, spatter-dock, *dulichium*, and purple cinquefoil. The area contains approximately 46 acres (Botanical).

Terriault Pass: This site is a prominent U-shaped feature on the skyline seen while traveling north on US Hwy 95 between Fortine and Eureka. It is a fault-notch that was scraped/gouged/expanded by ice backing to the west away from the main alpine lobe. The area contains approximately 493 acres (Geological).

Vermilion Falls: This site is represented by a series of falls located on the middle section of the Vermilion River near where Thirteen Gulch and Little Joe Gulch join the river. The area has a lot of historical (traditional cultural) value. The area contains approximately 99 acres (Historical/Recreational).

Vinal Lake: A glacial lake located just east of the Yaak River between Vinal Creek and Yodkin Creek. The surrounding vegetation is composed of moist forest vegetation. It has important historical (traditional cultural) aspects. The area contains approximately 83 acres (Historical/Botanical).

Yaak Falls: It is the second largest falls on the KNF, but has a greater drop than Kootenai Falls. Since the top of the falls is adjacent to the Yaak Highway it has high recreational interest. An old roadway spanned the top of the falls at one time. It also has important historical (traditional cultural) aspects. The area contains approximately 44 acres (Historical/Recreational).

Research Natural Areas (RNAs)

Introduction

Research Natural Areas are part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on NFS lands. RNAs are for non-manipulative research, observation, and study. Most of these areas protect either outstanding examples of late-successional plant communities; pristine examples of plant communities that are relatively rare; or unusual complexes of plant communities in very good condition. They also may assist in implementing provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act. The prime consideration in managing RNAs is maintenance of unmodified conditions and natural processes. Most areas were established prior to the beginning of this Draft Forest Plan effort. The few that are proposed in this Plan were identified over the previous ten years as unique habitats or prime examples of habitat types that are not currently identified in existing RNAs.

The selection and establishment of RNAs in Region 1 is guided by the ‘Research Natural Areas of the Northern Region: Status and Needs Assessment (Oct. 1996) The Forest Service Manual (FSM 4063) and Establishment Record provide specific direction concerning RNA management.

Following is a brief description of each existing or recommended RNA. A locator map and individual maps are found following the descriptions of the RNAs.

Existing Research Natural Areas

Big Creek: The RNA is located on a series of terraces at the mouth of Big Creek where it joins Koocanusa Reservoir. The main habitat type is Douglas-fir/dwarf huckleberry. This vegetative type is uncommon on the KNF and is generally confined to terraces and benches. The soil material is a glacio-fluvial deposit composed mainly of mixed and sorted silts, sands, and gravels. The terraces are nearly flat except for the steep edges that slope into the reservoir. This habitat type is generally only found on benchy/terracy landforms. Other vegetative types include drier Douglas-fir types, but scattered western red cedar and Engelmann can be seen. Established in 1991 the RNA contains approximately 178 acres.

Hoskins Lake: Hoskins Lake RNA is comprised of rolling to steep forested, mountainous terrain in the Yaak River drainage. The major habitat type is Engelmann spruce/queencup beadlily; others include Engelmann spruce/twinflower, Douglas-fir/twinflower, and western red cedar/queencup beadlily. The topography from the western boundary gradually rises to the east ending in two knobs. From these knobs the landform drops sharply to the east towards two lakes. The lakes lie in a structural trough created by fault activity and further enhanced by subsequent glacial scouring. Mature stands of western larch, Douglas-fir, Engelmann spruce, and western red cedar occupy much of the area. Established in 1992 the RNA contains approximately 376 acres.

LeBeau: Ridges and troughs, formed by intense glacial scouring as ice sheets advanced through a narrow portion of the Rocky Mountain Trench, characterize the topography of the LeBeau RNA. The resultant ridges, cliffs, and troughs are oriented parallel to the flow of the glaciers, generally north-south. A number of nearly level ridgetops support interesting herbaceous communities with an abundance of clubmosses, true mosses, and lichens. The more rounded ridgetops and mountain slopes support forests dominated by Douglas-fir, subalpine fir, western larch, and lodgepole pine. Troughs and valley bottoms feature wetlands and mesic forests, of spruce, grand fir, western red cedar, and western hemlock. Seven ponds and one lake ranging in size from 5 to 34 acres occur within the RNA. LeBeau RNA provides an important and viable area to meet the need for a landscape-level reference for understanding the range of natural variability of larger-scale natural processes. Established in 1995 the RNA contains approximately 5,709 acres. The RNA is shared with the Flathead National Forest. Only 411 acres are on the KNF.

Lower Ross Creek: The RNA contains an extensive stand of large, mature western red cedar. The wind-sheltered position and perpetual moistness of the streamsides have protected the western red cedar from most wildfires. It is evident light ground fire has moved into the stands as indicated by charred stumps and stems of cedars. Some stand-replacing fires have occurred as evidenced by some seral communities dominated by western larch, lodgepole pine, and Douglas-fir. The mature stands generally contain western red cedar, western hemlock, and western white pine. The mountain slopes are underlain by quartzite bedrock of the Belt rock group with several rock outcrops and talus slides present. The area was influenced by both alpine and continental glaciation. Some of the cedars may be more than 1,000 years old. Established in 1997 the RNA contains approximately 1,874 acres.

Norman Parmenter: The vegetation of the RNA varies from mature trees of western hemlock, western red cedar, black cottonwood, Douglas-fir, Engelmann spruce, and subalpine fir to pole-sized grand fir, western larch, Douglas-fir, lodgepole pine, western white pine, and Engelmann spruce. High water flows during winter rain-on-snow events and/or high spring flows have caused the main Parmenter Creek channel to migrate across the flood plain. These flood events have produced favorable habitat for the establishment of black cottonwood. The main vegetative features are Douglas-fir/pinegrass habitat type and stands of black cottonwood. The RNA lies in a canyon that was developed through natural processes, but was strongly influenced by alpine glaciation. Established in 1997 the RNA contains approximately 1,289 acres.

Pete Creek Meadows: Pete Creek Meadows RNA is located in the Purcell Mountains in extreme northwestern Montana. It occupies the headwater reaches of Pete Creek within the Yaak River watershed. It lies on the topographic divide of two large watersheds. The RNA contains a series of wet meadows and adjacent stands of coniferous forest. Pole-sized to mature stands of subalpine fir, Engelmann spruce, and lodgepole pine occupy the small hillocks in the almost-level terrain. Sedges dominate the low-lying areas. The area is within a northwest trending fold, which lies about halfway between the Sylvanite Anticline and the Yaak River Syncline. Established in 1992 the RNA contains approximately 153 acres.

Ulm Peak: This RNA along the Bitterroot Divide contains a mature stand of mountain hemlock forest. Mountain hemlock is found primarily in the Cascade Mountains, western British Columbia, southern Alaska, and northern California. This site represents mountain hemlock's eastern range limits. This stand is valuable because of its mature, well-developed status. Fire has not influenced much of the RNA during the past two centuries. The area exhibits steep, rocky cliffs and talus slides. Ancient ripple marks and mud cracks are characteristic of the Precambrian bedrock. Whitebark pine and lodgepole pine are common along the edges of the rocky sites. The cliffs are wet and seep moisture through most of the summer. The wet ledges and crevices support an abundance of liverworts, mosses, ferns, and high moisture-requiring vascular plants. Established in 1988 the RNA contains approximately 689 acres.

Wolf Weigel: The RNA is located along the western edge of the Salish Mountains in northwestern Montana. It features a gorge and waterfall, a steep-sided basin, and a wetland dominated by willows and sedges. The vegetation varies from old growth elements of subalpine fir, Engelmann spruce, western larch, and Douglas-fir to pole and sapling-sized lodgepole pine and western larch. The steep southerly and westerly slopes are comprised mainly of shallow soil, rock outcrops, and talus dominated by dry Douglas-fir vegetation while the gentler slopes have deeper soil and a greater variety of vegetation. The RNA includes a surface expression of the Pinkham Thrust; thus, the head of Wolf Creek lies in a trough. As a result, the head of Weigel Creek and glacial lakes draining to the south have downcut a steep canyon as it joins Wolf Creek. Established in 1992 the RNA contains approximately 240 acres.

Recommended Research Natural Areas

Doonan Peak: The area contains hybrids of a cross between western larch and alpine larch. It is known as hybrid larch. This site has an extensive, well-developed distributional overlap of western larch and alpine larch and their natural hybrids. Trees of all three taxa are present in both old growth and young age classes. It is the largest known concentration of hybrid larch in northwestern Montana. After the St. Mary's area in the Bitterroot Valley it is the most extensive natural hybridization zone of western larch and alpine larch. The site also contains a tree that is nominated for the Montana Champion Tree Program for alpine larch. The proposed RNA is located adjacent to the Cabinet Mountain Wilderness. The area is in a rugged glacial cirque

having a steep headwall with talus slopes and an adjacent subalpine ridge. The site contains approximately 504 acres.

Huson Peak: The area contains a viable stand of whitebark pine. This stand is an historic representation of the species for western Montana and northern Idaho. The site is used for collecting seed for a breeding program to determine genetic resistance of the species to white pine blister rust. It is not known if these trees contain any rust resistance, but they are alive and well, while many of the stands in the area have been killed by the rust. The stands are generally located above 5,800 feet elevation. This site is approximately 731 acres.

Seven Point Genetical: The area contains a viable stand of whitebark pine. This stand is an historic representation of the species for western Montana and northern Idaho. The site is used for collecting seed for a breeding program to determine genetic resistance of the species to white pine blister rust. It is not known if these trees contain any rust resistance, but they are alive and well, while many of the stands in the area have been killed by the rust. The stands are generally located above 5,800 feet elevation. This site is approximately 1,991 acres.

Table 1. Research Natural & Special Areas Maps Index

Map Ref #	Area Name	District	Page #
40	Bad Medicine Zoological /Historical Area	Three Rivers	
58	Baree Creek Historical Area	Libby	
55	Barnum Wetland Botanical Area	Libby	
47	Barron Creek Historical Area	Libby	
60	Berray Cedars Botanical Area	Cabinet	
15	Big Creek Face Historical Area	Eureka	
13	Big Creek RNA	Eureka	
50	Bitterroot Point Botanical / Historical Area	Libby	
36	Callahan Historical Mining & Logging District Historical Area	Three Rivers	
61	Chicago Peak Historical Area	Cabinet	
53	Cody Lakes Botanical / Zoological Area	Libby	
38	Doonan Peak RNA	Three Rivers	
44	East Fork Pipe Creek Geological Area	Libby	
35	Falls Creek Scenic / Geological Area	Three Rivers	
45	Fivemile Historical Area	Libby	
52	Flower Lake Botanical Area	Libby	
23	French Creek Cedars Botanical Area	Three Rivers	
7	Gateway Prairie Botanical Area	Eureka	
57	Geiger Lakes Historical Area	Libby	
37	Halverson Face Botanical Area	Three Rivers	
3	Hidden Lake Botanical Area	Fortine	
20	Hoskins Lake RNA	Three Rivers	
49	Huson Peak RNA	Libby	
28	Kelsey Creek Botanical Area	Three Rivers	
56	Kenelty Caves Geological Area	Libby	
34	Kootenai Falls Historical Area	Three Rivers	
33	Kootenai Mountain Historical Area	Three Rivers	
5	LeBeau RNA	Fortine	
14	Little North Fork Falls Recreational / Historical Area	Eureka	
29	Lost Horse Fen Botanical Area	Three Rivers	
46	Lower Bristow Historical Area	Libby	
42	Lower Ross Creek RNA	Three Rivers	
11	Lower Stone Hill Historical Area	Eureka	
4	Lower Sunday Cr. Ecosystem Botanical/Historical Area	Fortine	
22	Lower W. F. Yaak Falls Historical / Geological Area	Three Rivers	
51	Norman Parmenter RNA	Libby	
25	Northwest Peak Scenic Area	Three Rivers	
26	Pete Creek Botanical Area	Three Rivers	
24	Pete Creek Meadows RNA	Three Rivers	
9	Pinkham Falls Historical / Geological Area	Eureka	

8	Rexford Hoodoos Geological Area	Eureka	
62	Rock Creek Meadows Botanical Area	Cabinet	
6	Rocky Fivemile Forest Botanical Area	Fortine	
41	Ross Creek Scenic Area / Historical Area	Three Rivers	
43	Ross Falls Historical / Geological Area	Three Rivers	
65	Seven Point Genetical RNA	Cabinet	
59	Silver Butte Mountain Historical Area	Libby	
39	Spar Springs Geological Area	Three Rivers	
27	Spread Otis Creeks Botanical Area	Three Rivers	
32	Star Canyon Geological Area	Three Rivers	
10	Stone Hill Recreational / Geological Area	Eureka	
12	Sutton Falls Historical / Geological Area	Eureka	
1	Ten Lakes Scenic Area	Fortine	
17	Tenmile Falls Historical / Geological Area	Eureka	
16	Tenmile Talus Geological Area	Eureka	
54	Tepee Lake Botanical Area	Libby	
2	Therriault Pass Geological Area	Fortine	
63	Ulm Peak RNA	Cabinet	
18	Upper Big Creek Riparian Ecosystem Botanical Area	Eureka	
64	Vermilion Falls Recreational / Historical Area	Cabinet	
21	Vinal Lake Historical / Botanical Area	Three Rivers	
48	Wolf Weigel RNA	Libby	
19	Wood Creek Larch Scenic Area	Three Rivers	
31	Yaak Falls Historical / Recreational Area	Three Rivers	
30	Yahk Mining District Historical Area	Three Rivers	

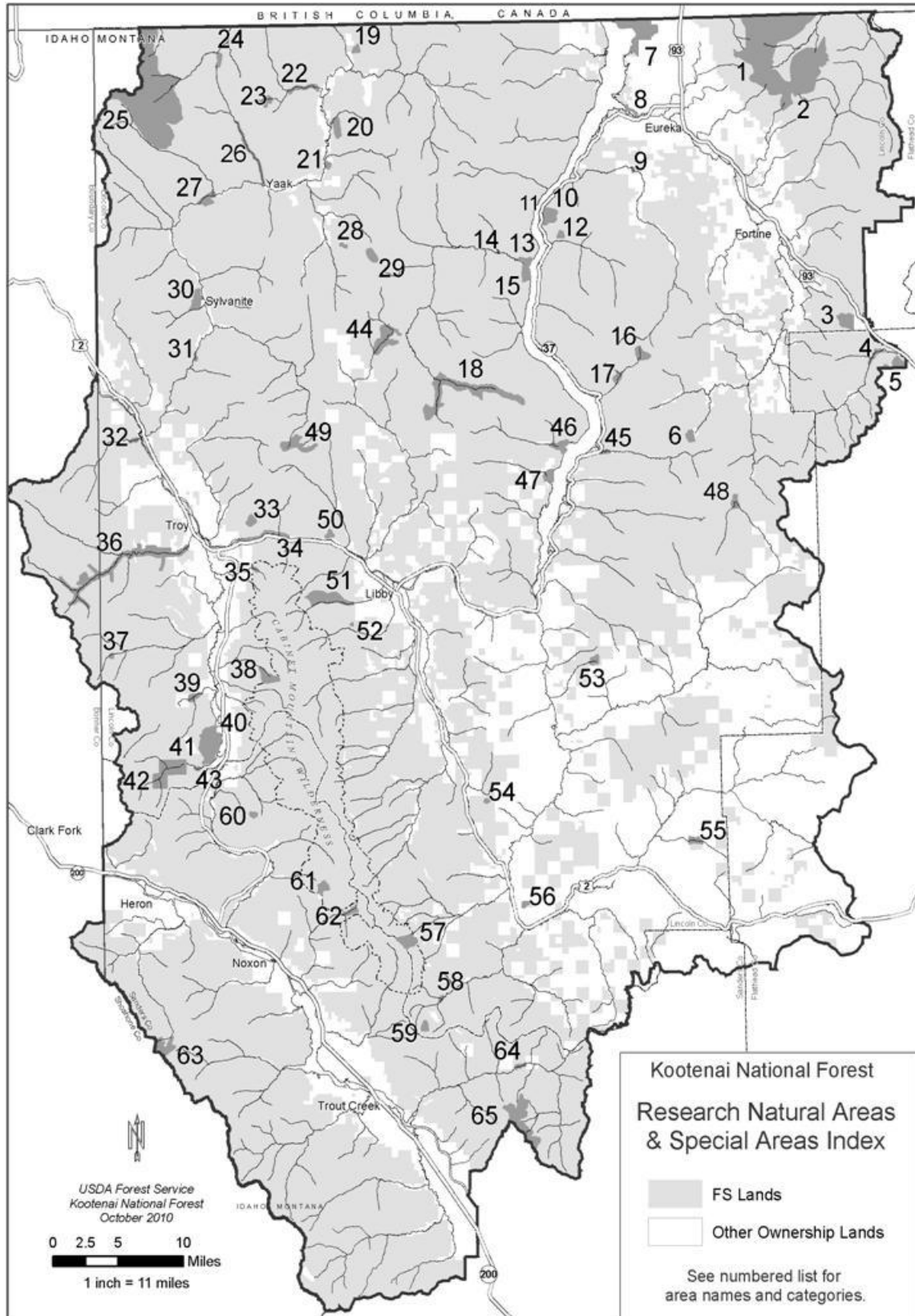


Figure 1. Index of Research Natural Areas & Special Areas Maps

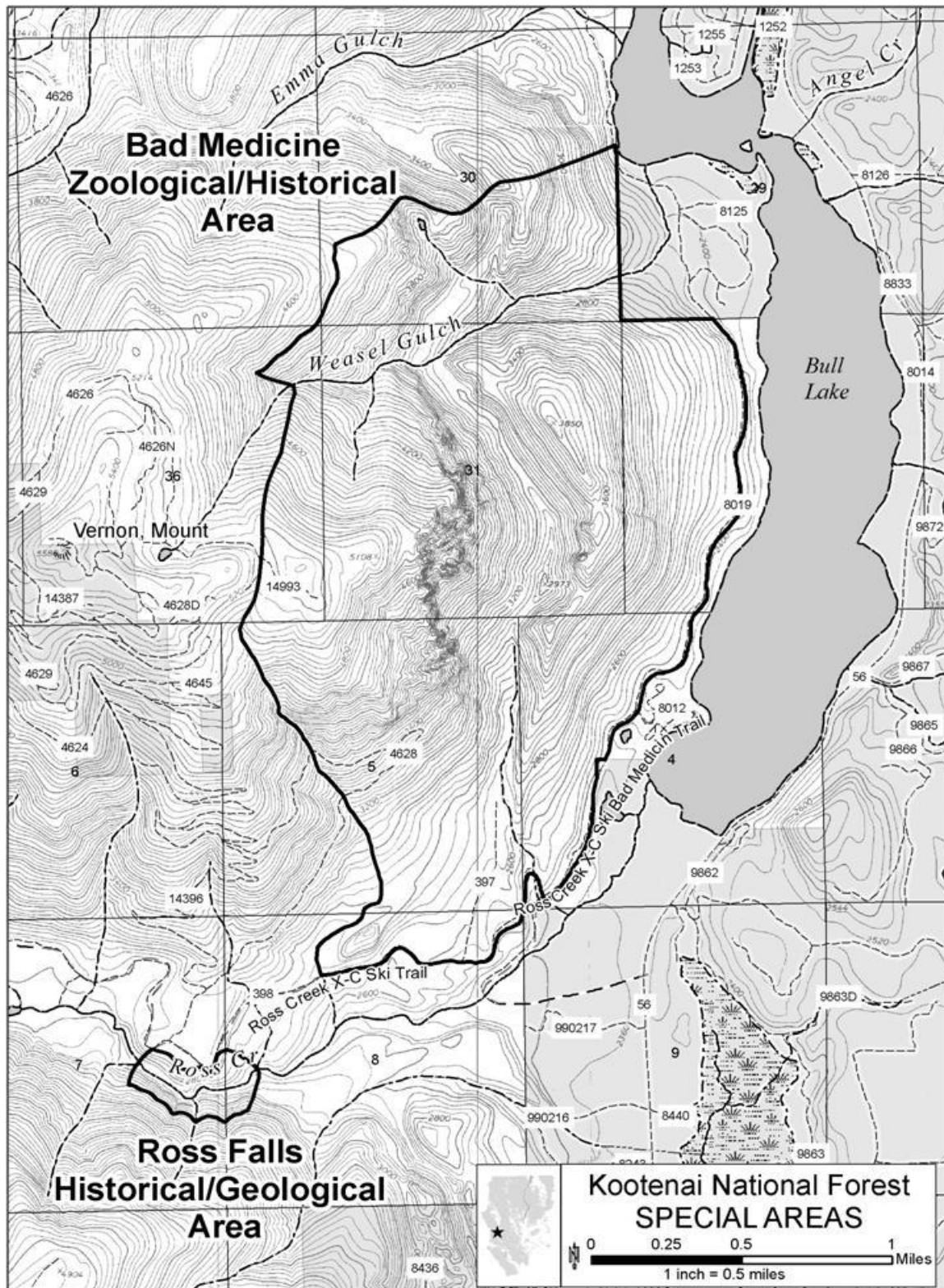


Figure 2. Bad Medicine Zoological /Historical Area

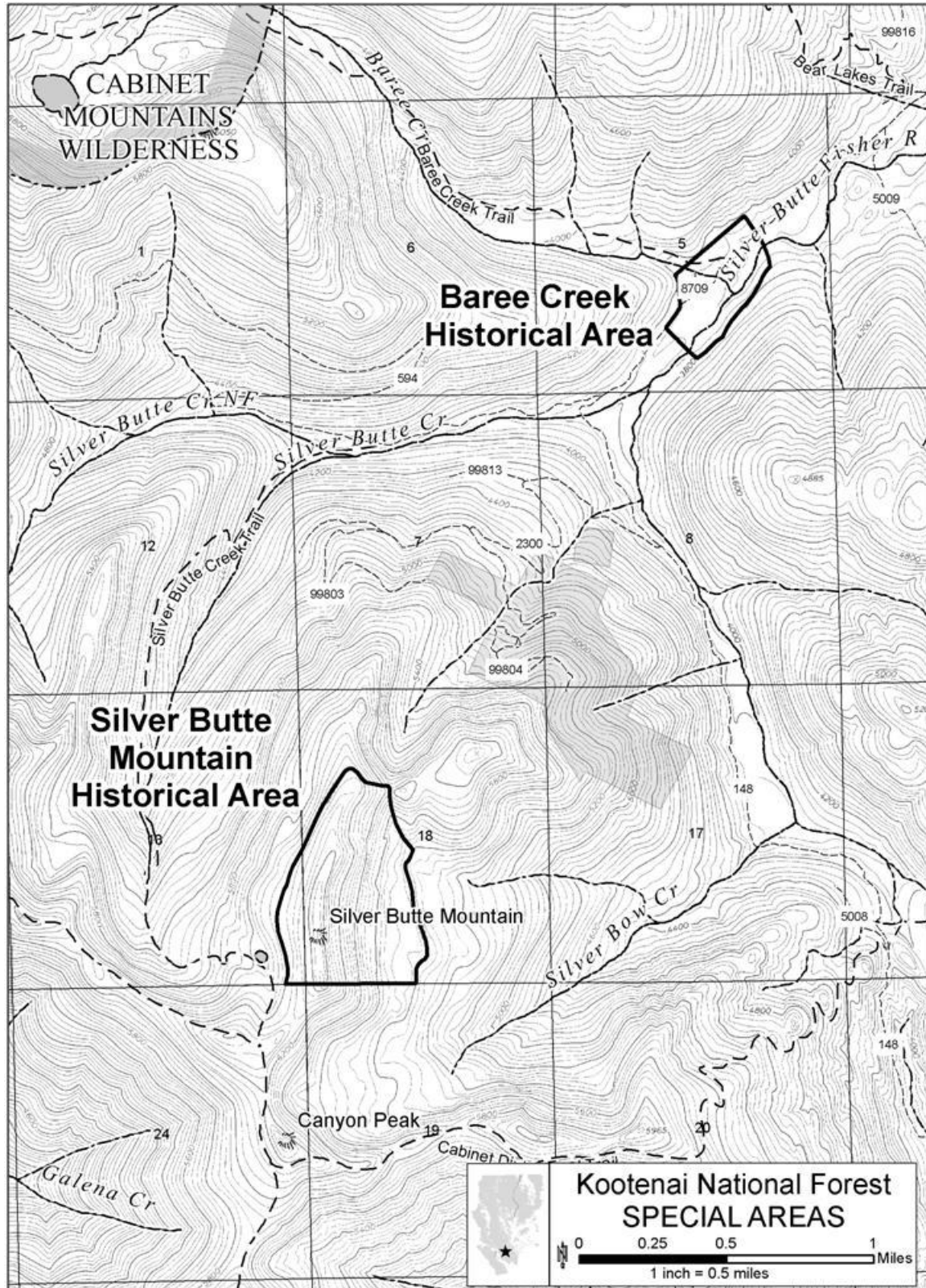


Figure 3. Baree Creek Historical Area/Silver Butte Mountain Historical Area

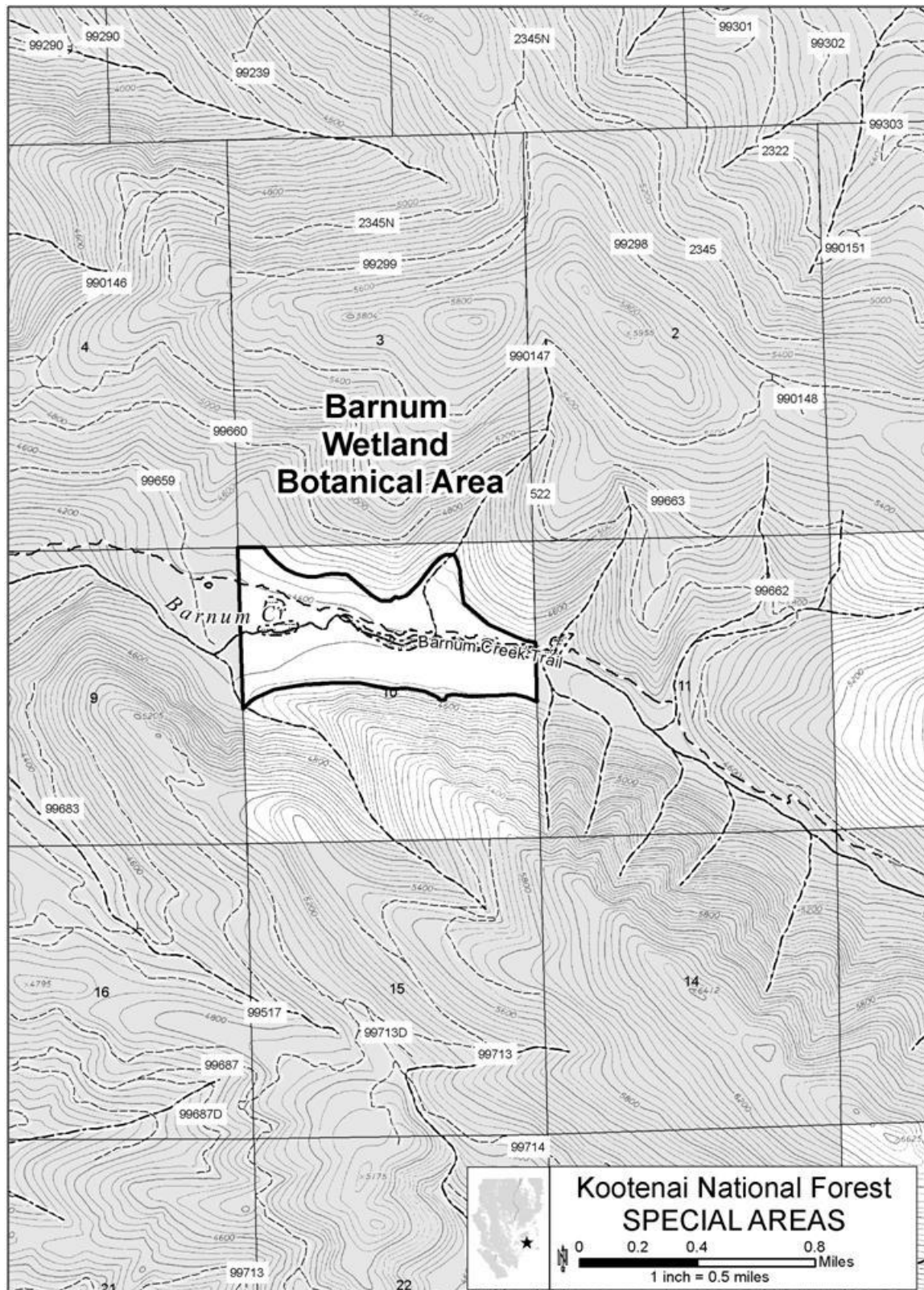


Figure 4. Barnum Wetland Botanical Area

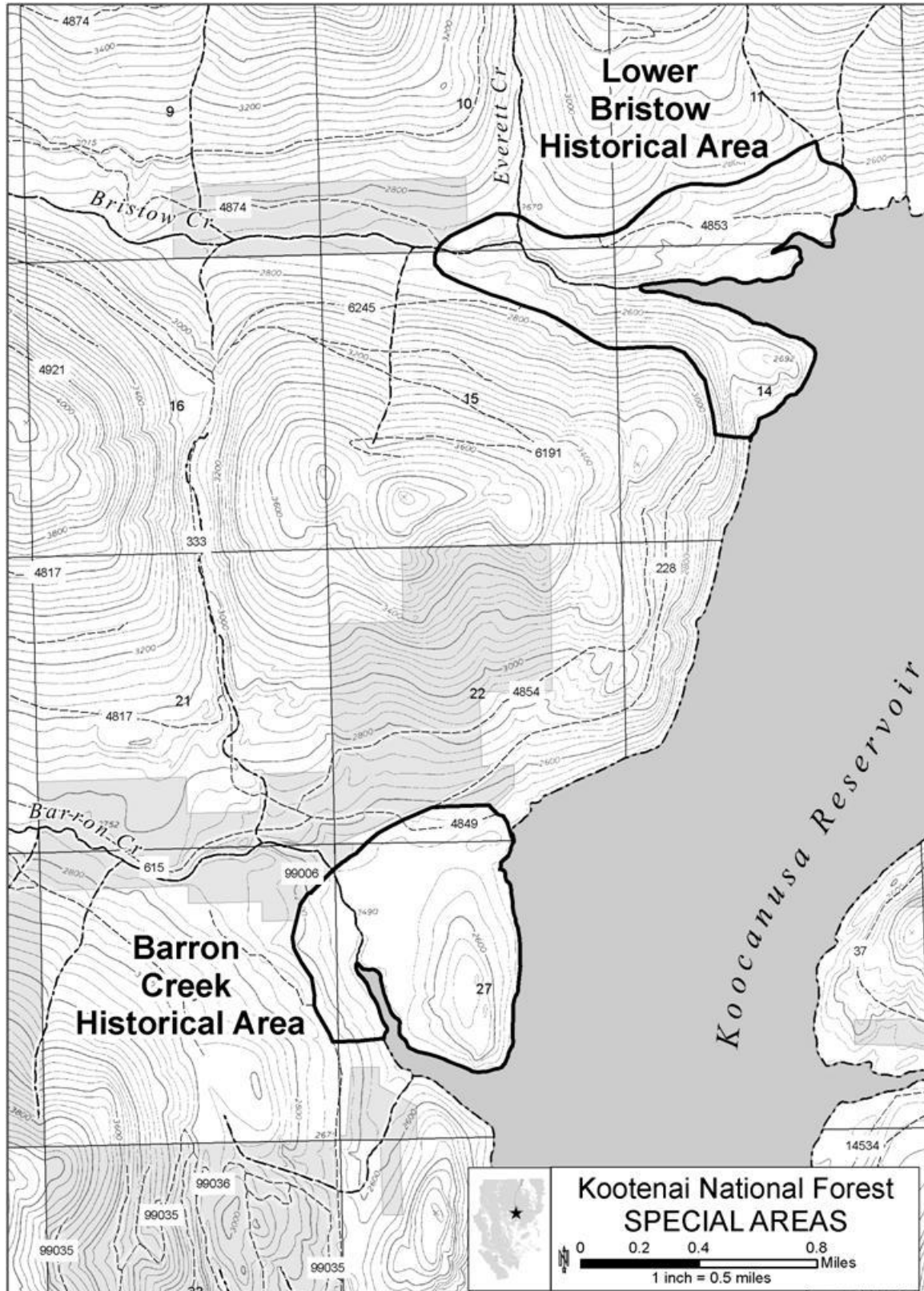


Figure 5. Barron Creek Historical Area/Lower Bristow Historical Area

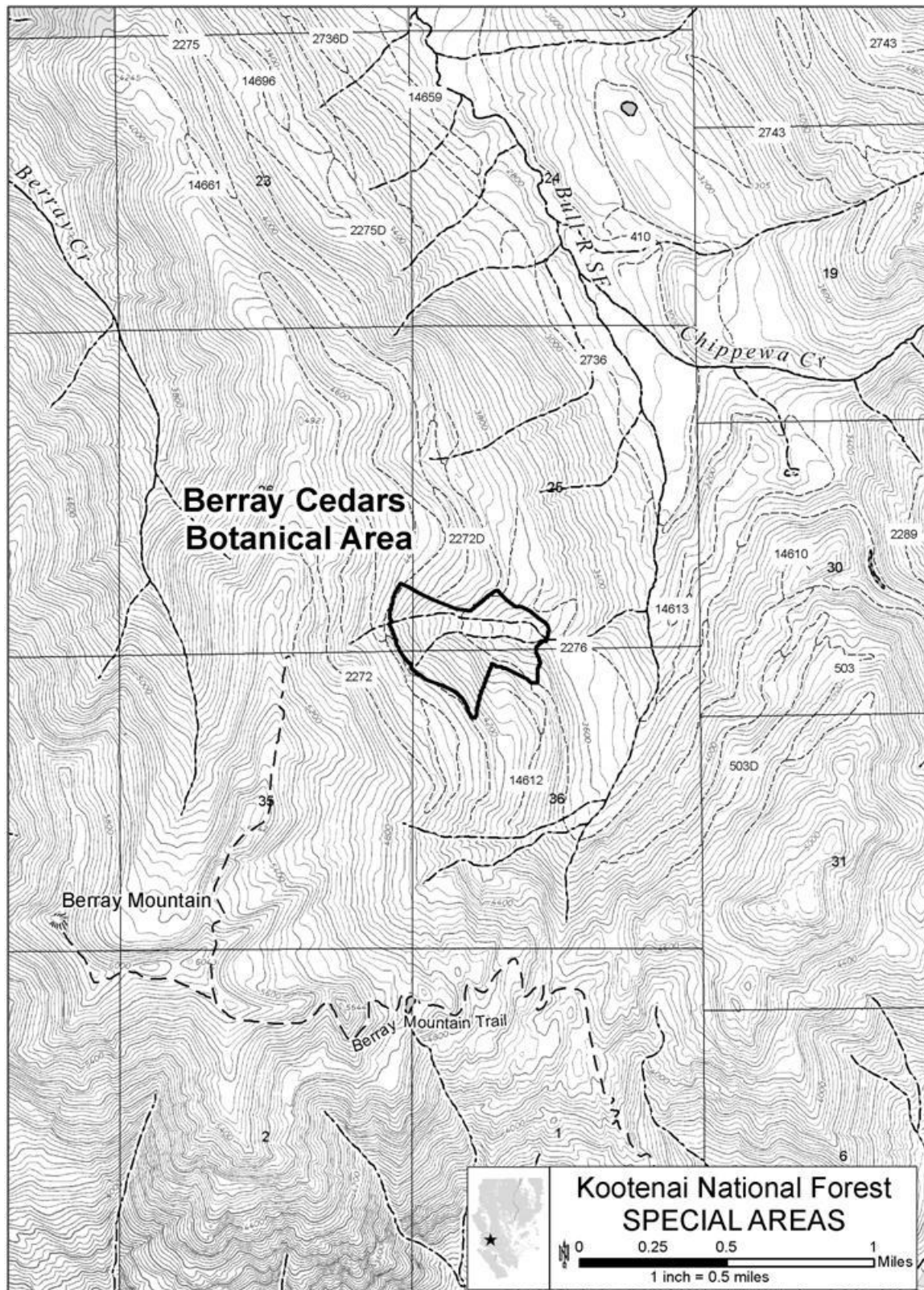


Figure 6. Berray Cedars Botanical Area

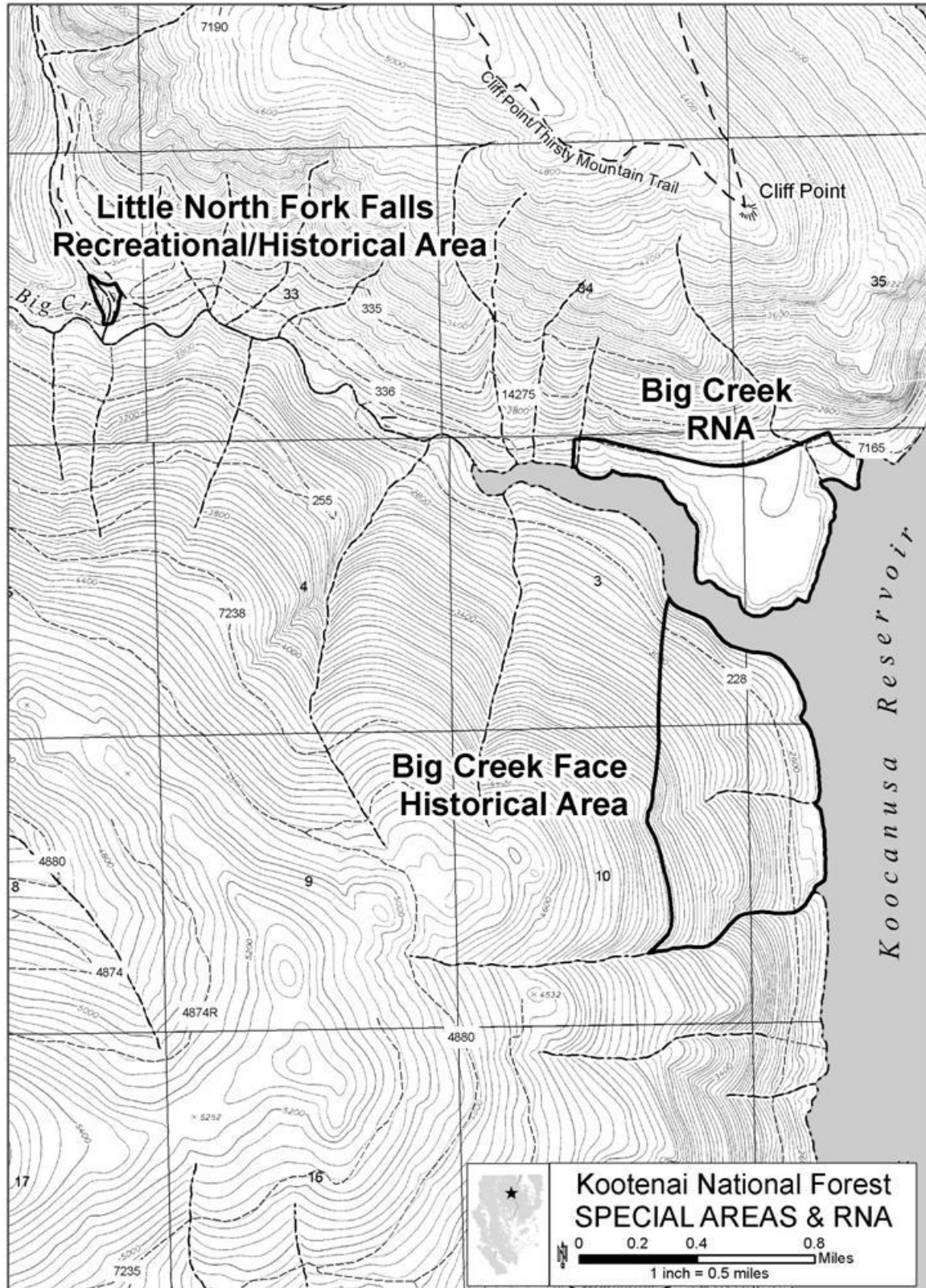


Figure 7. Big Creek Face Historical Area/Big Creek RNA/Little North Fork Falls Recreational/Historical Area

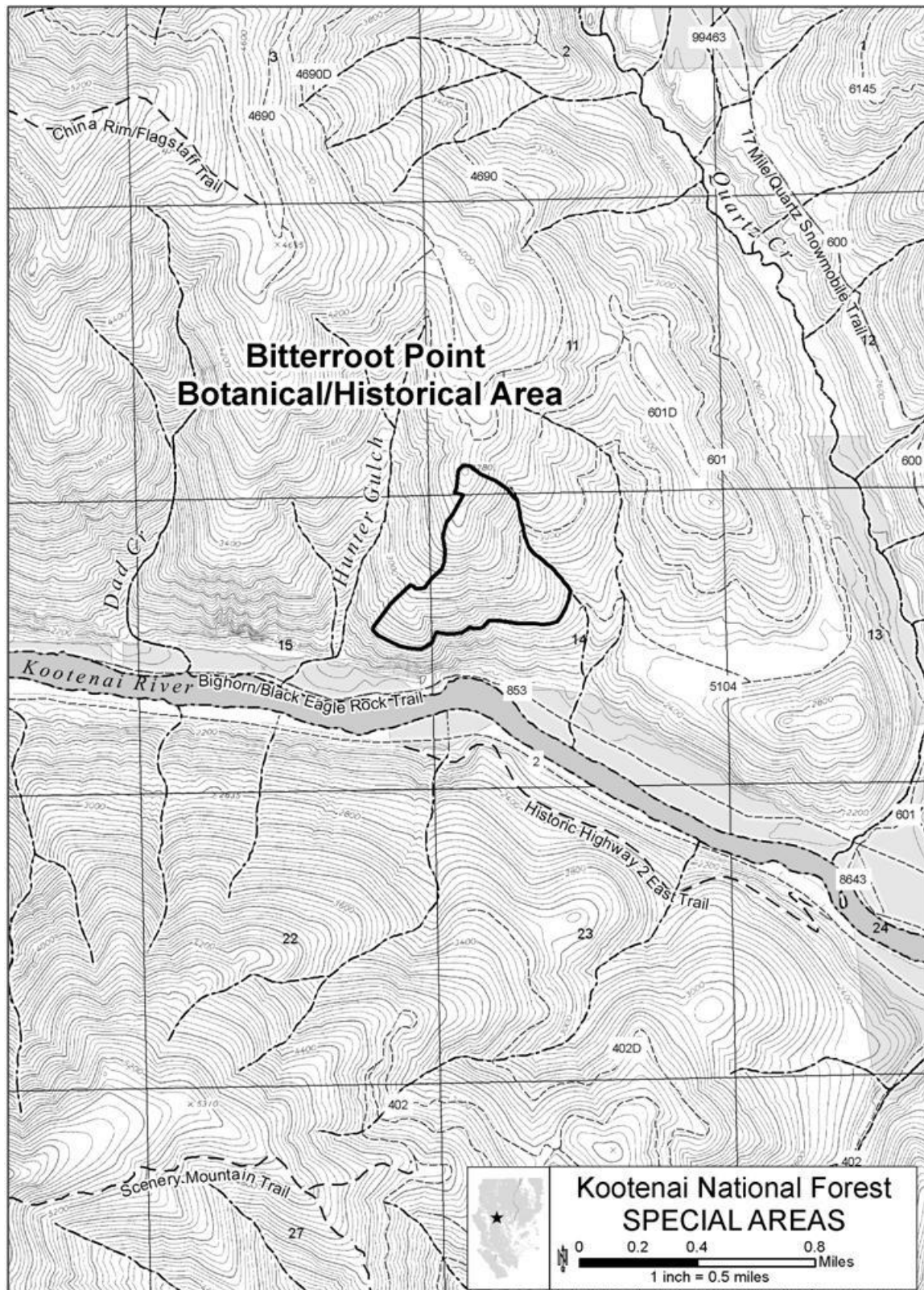


Figure 8. Bitterroot Point Botanical/Historical Area

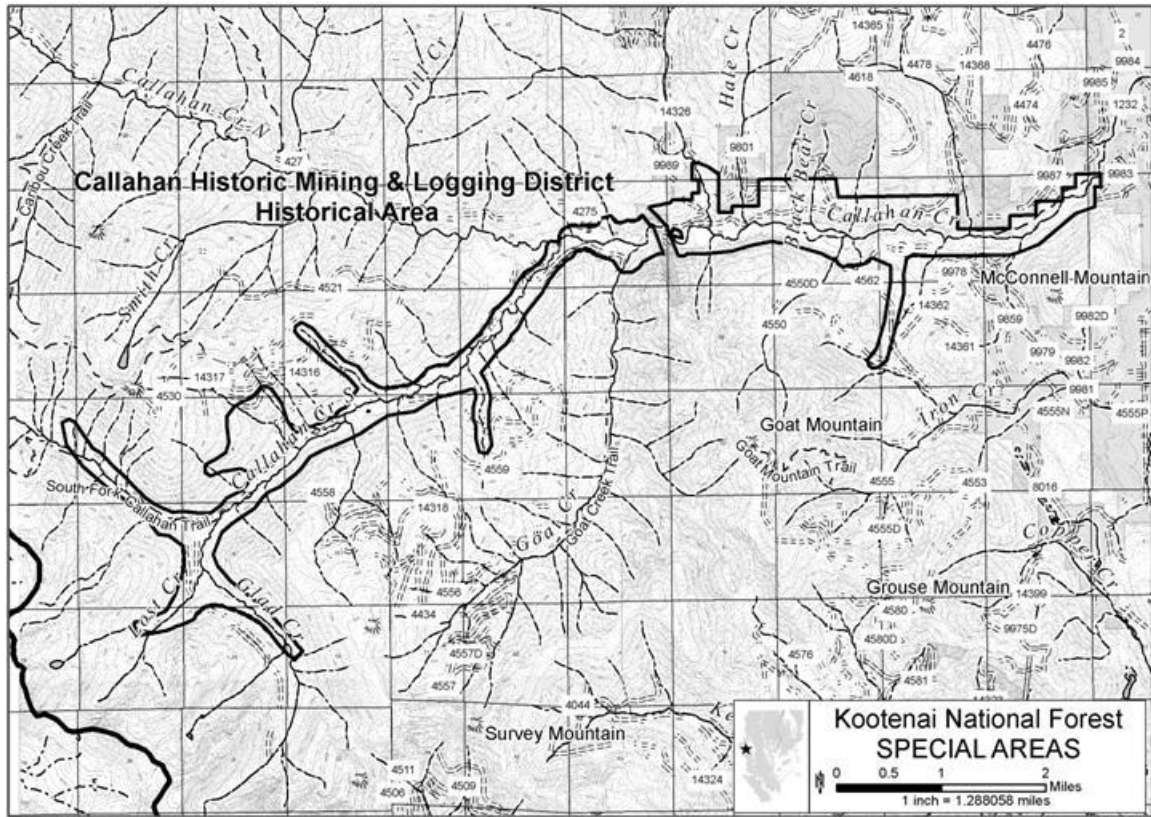


Figure 9. Callahan Historical Mining & Logging District Historical Area

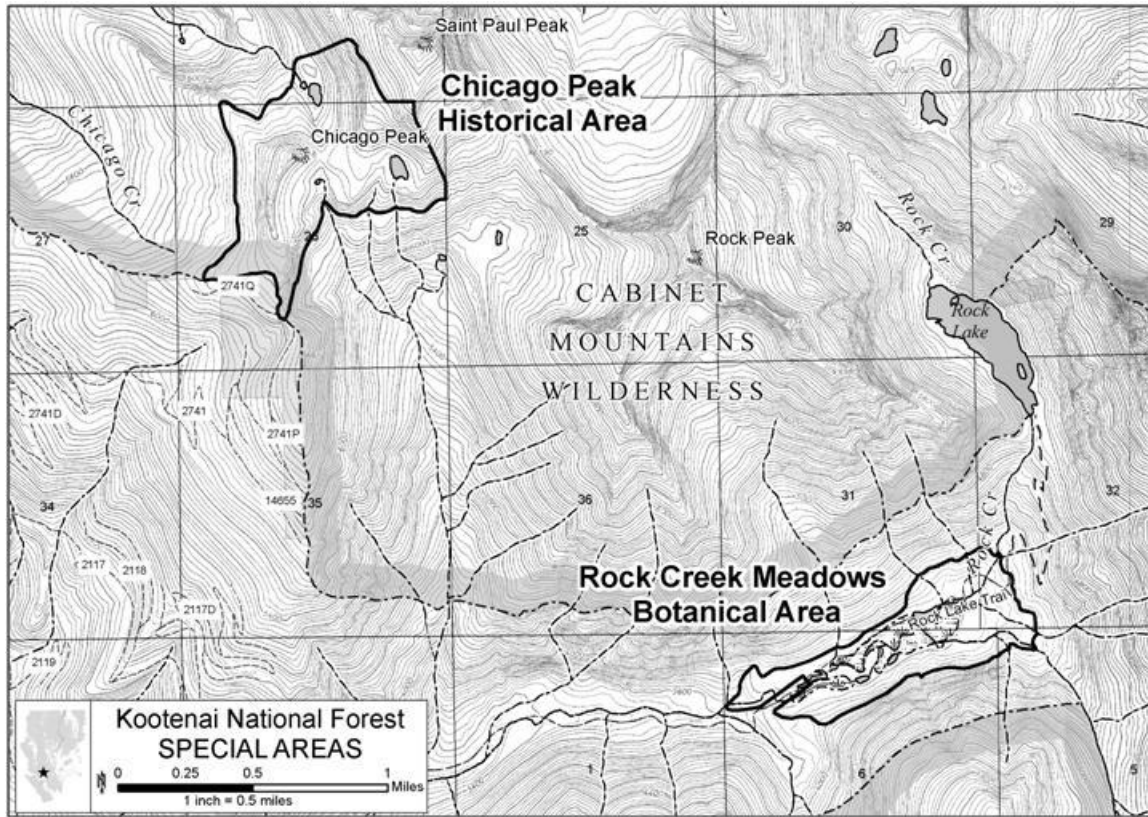


Figure 10. Chicago Peak Historical Area/Rock Creek Meadows Botanical Area

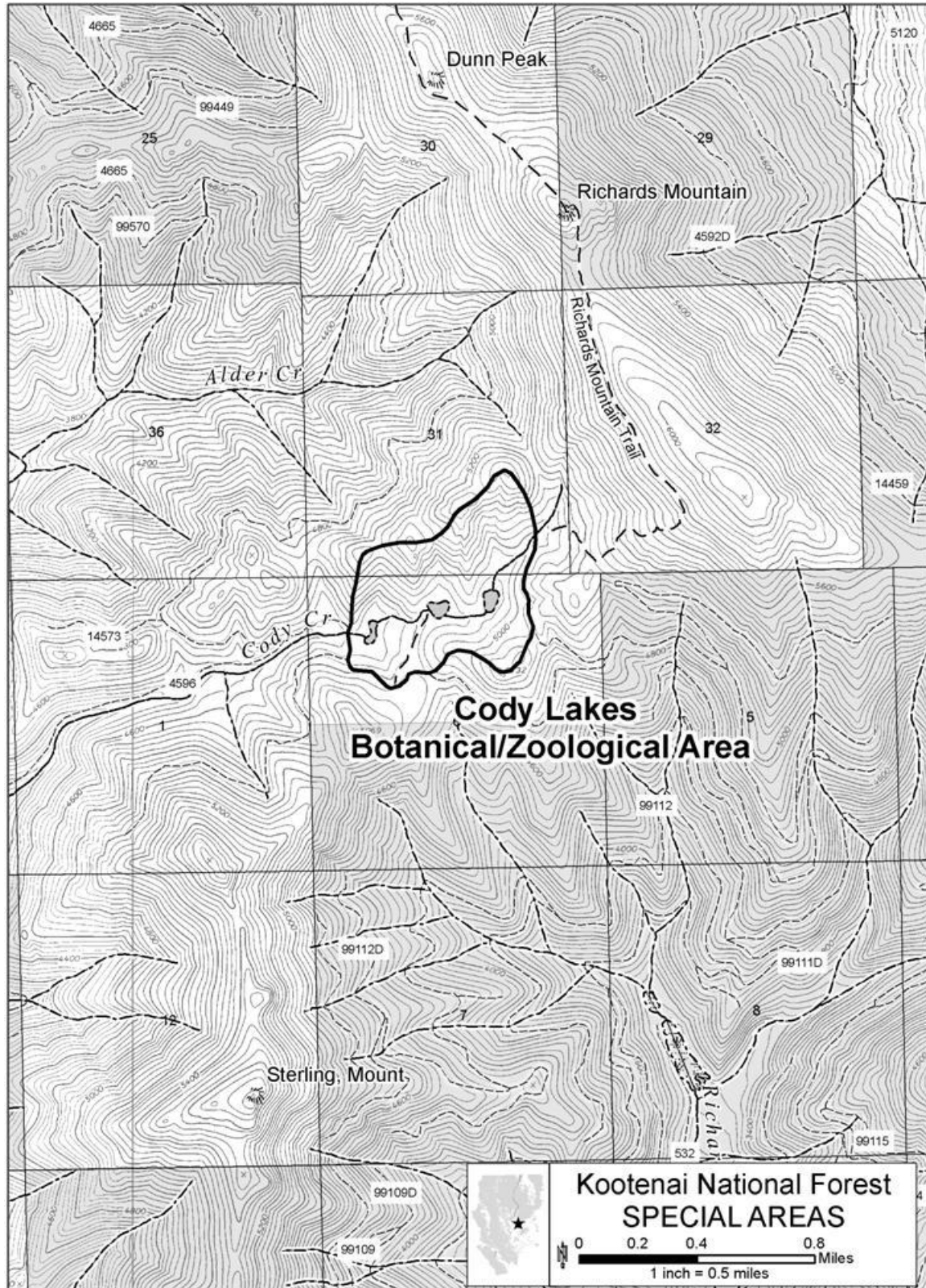


Figure 11. Cody Lakes Botanical/Zoological Area

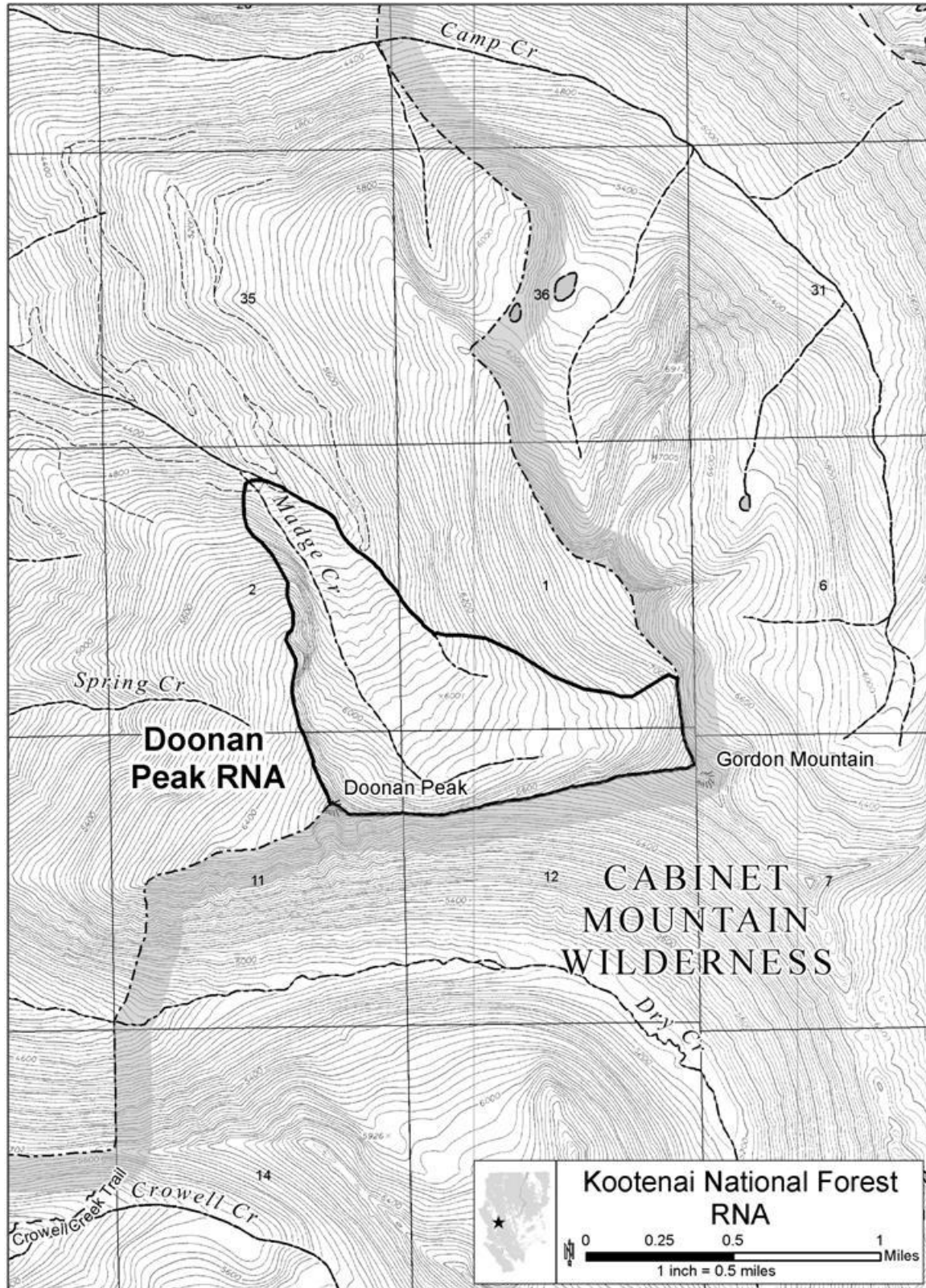


Figure 12. Doonan Peak RNA

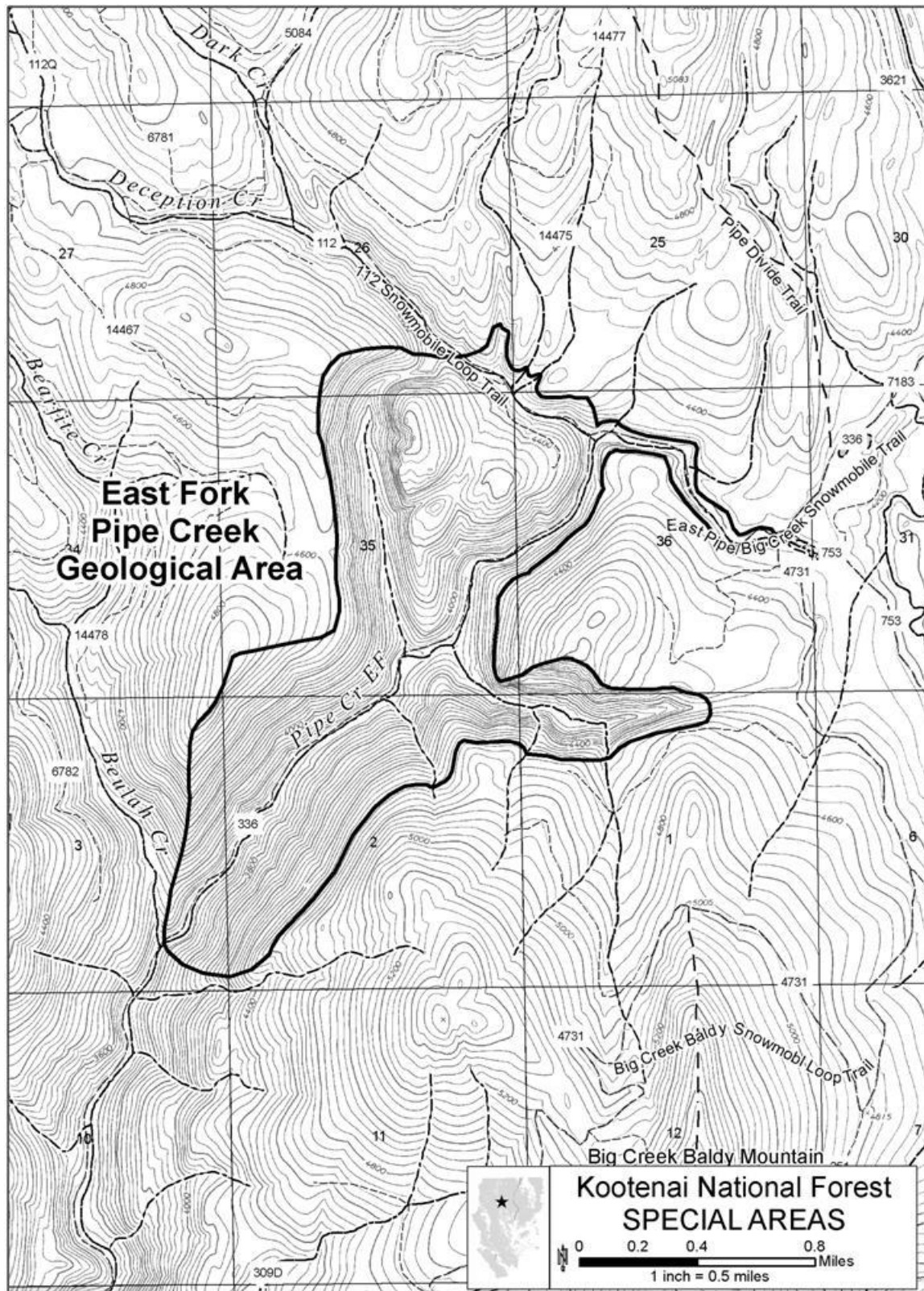


Figure 13. East Fork Pipe Creek Geological Area

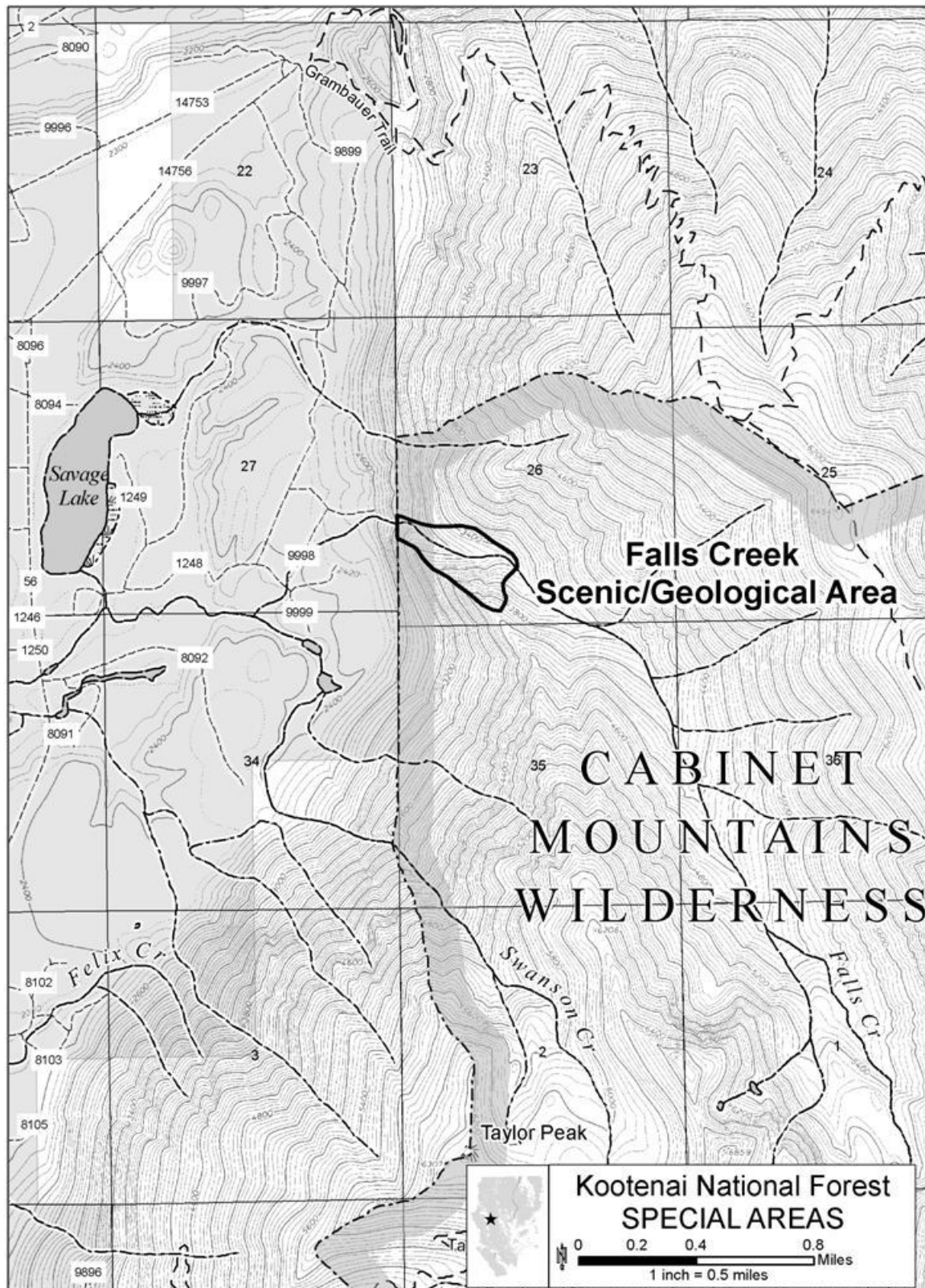


Figure 14. Falls Creek Scenic/Geological Areas

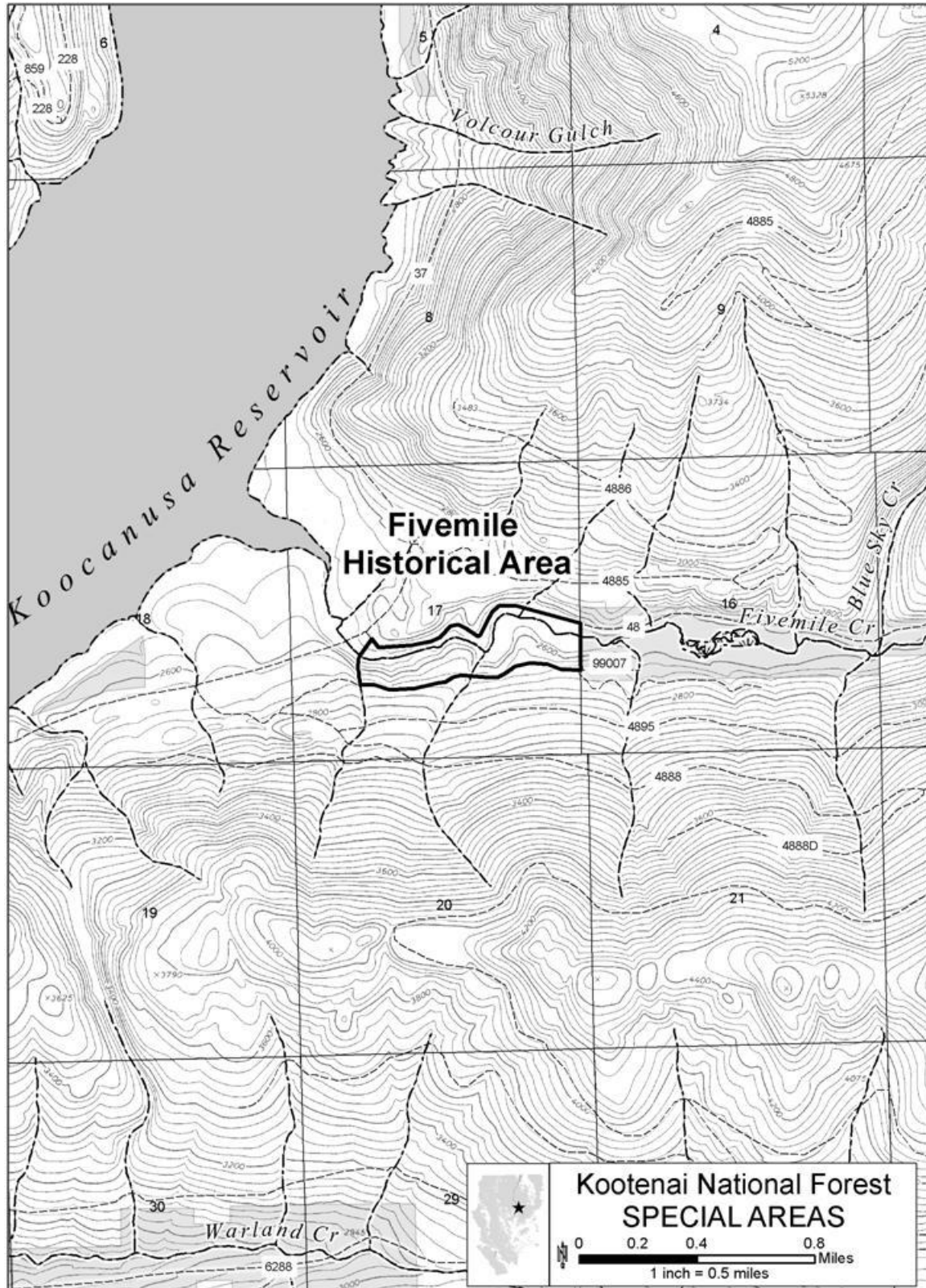


Figure 15. Fivemile Historical Area

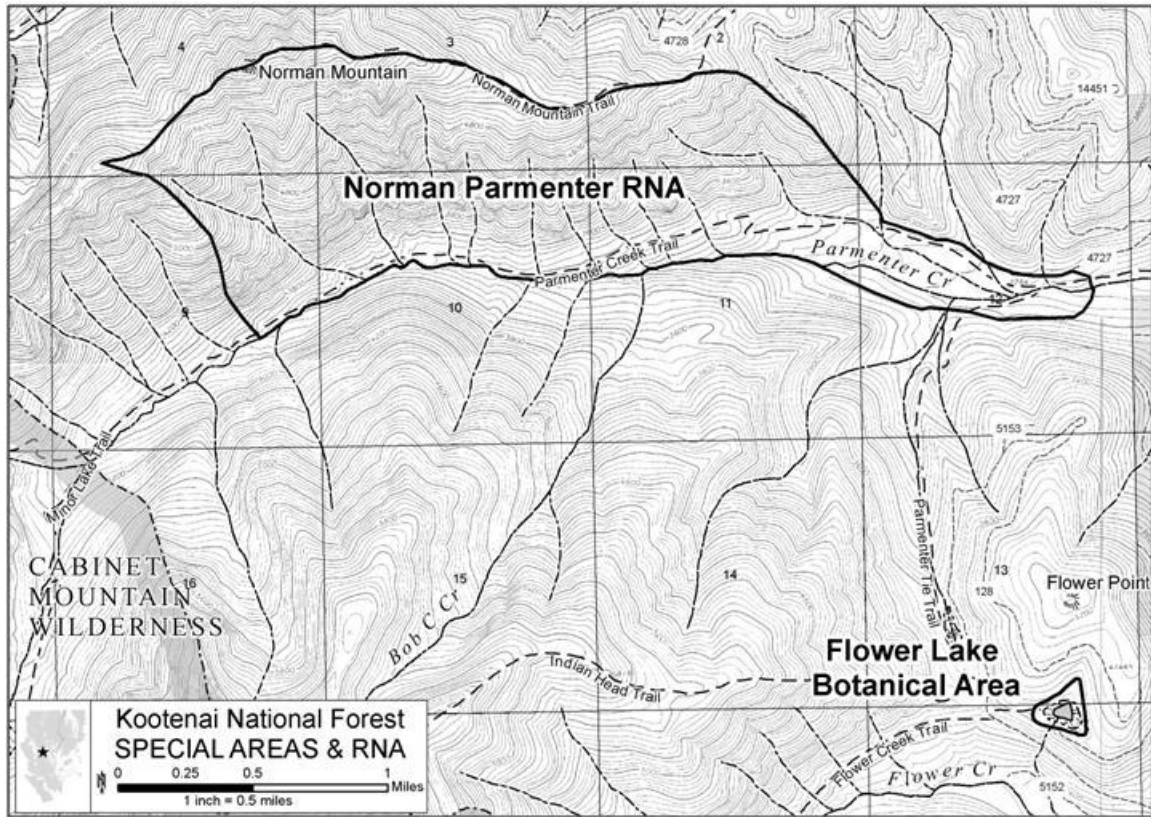


Figure 16. Flower Lake Botanical Area/Norman Parmenter RNA

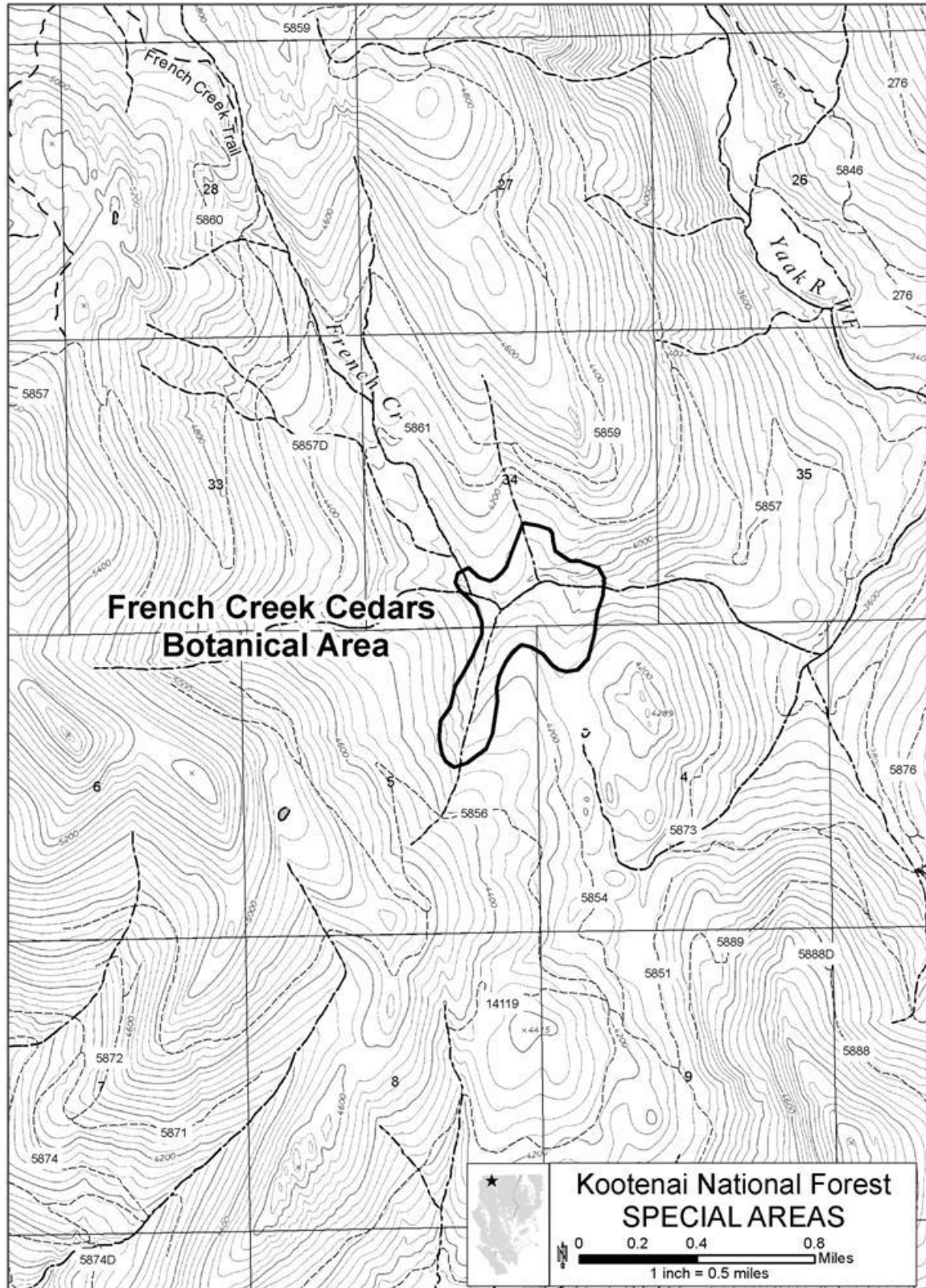


Figure 17. French Creek Cedars Botanical Area

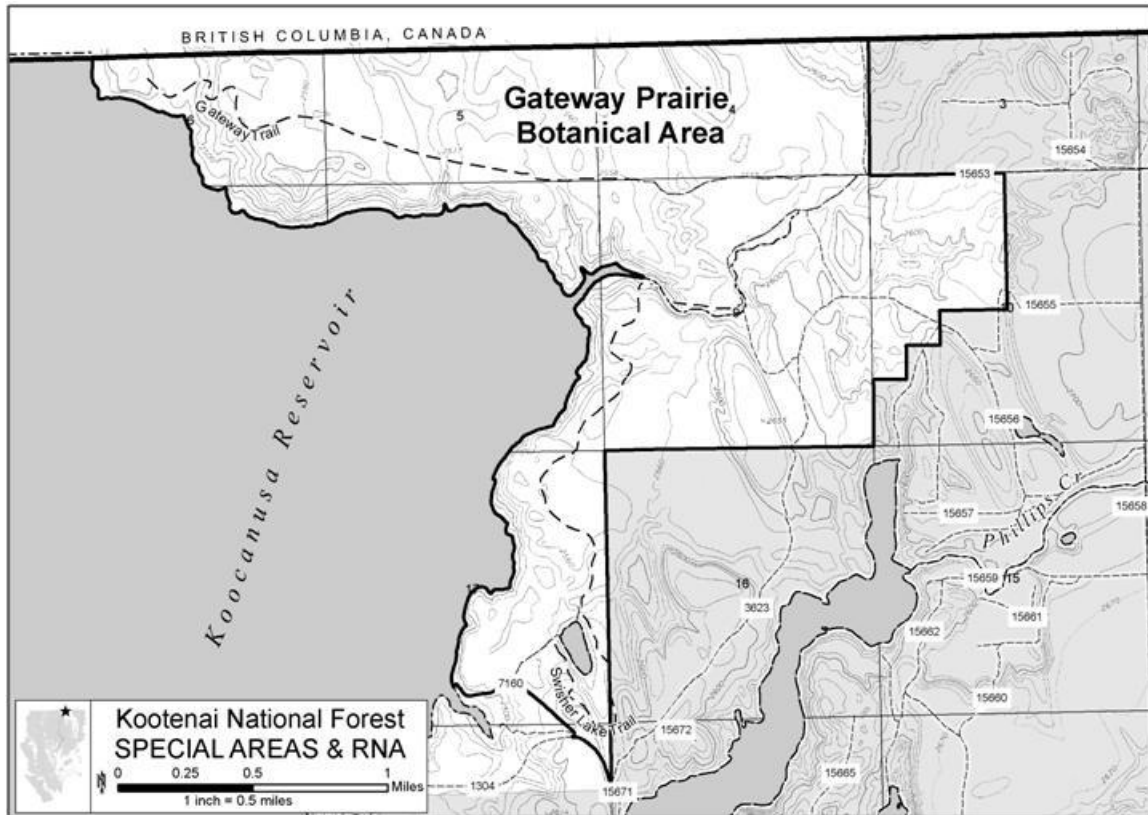


Figure 18. Gateway Prairie Botanical Area

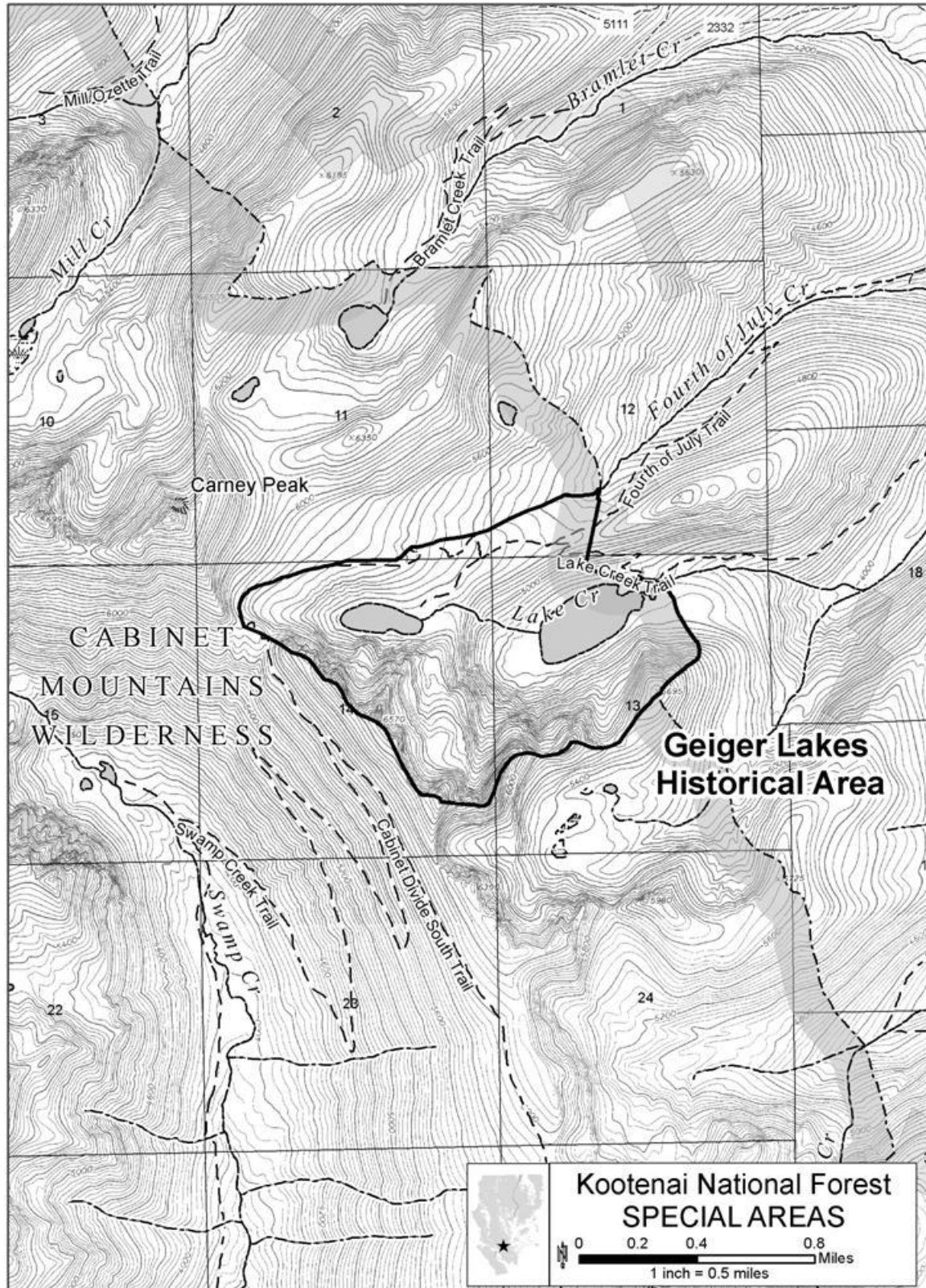


Figure 19. Geiger Lakes Historical Area

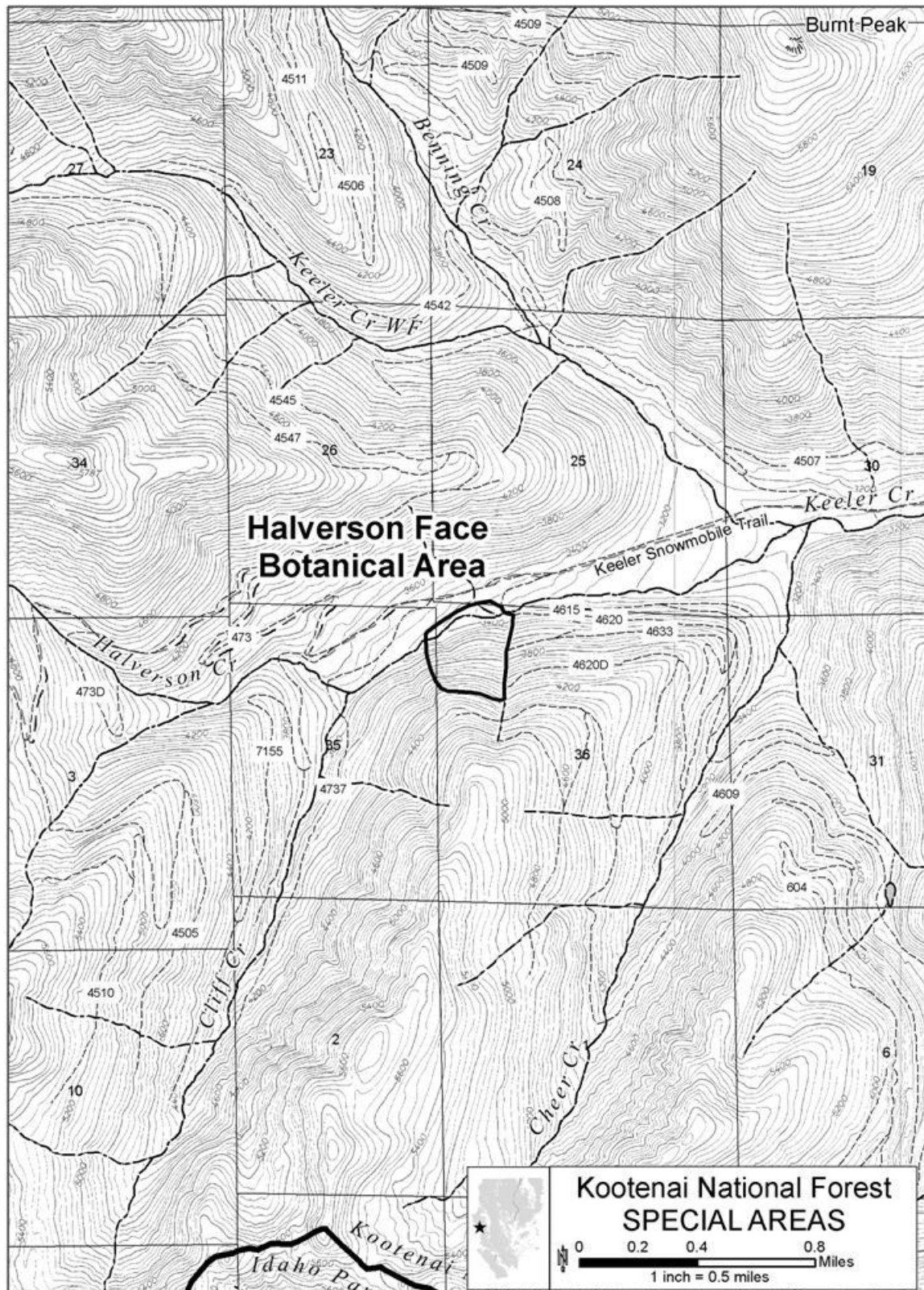


Figure 20. Halverson Face Botanical Area

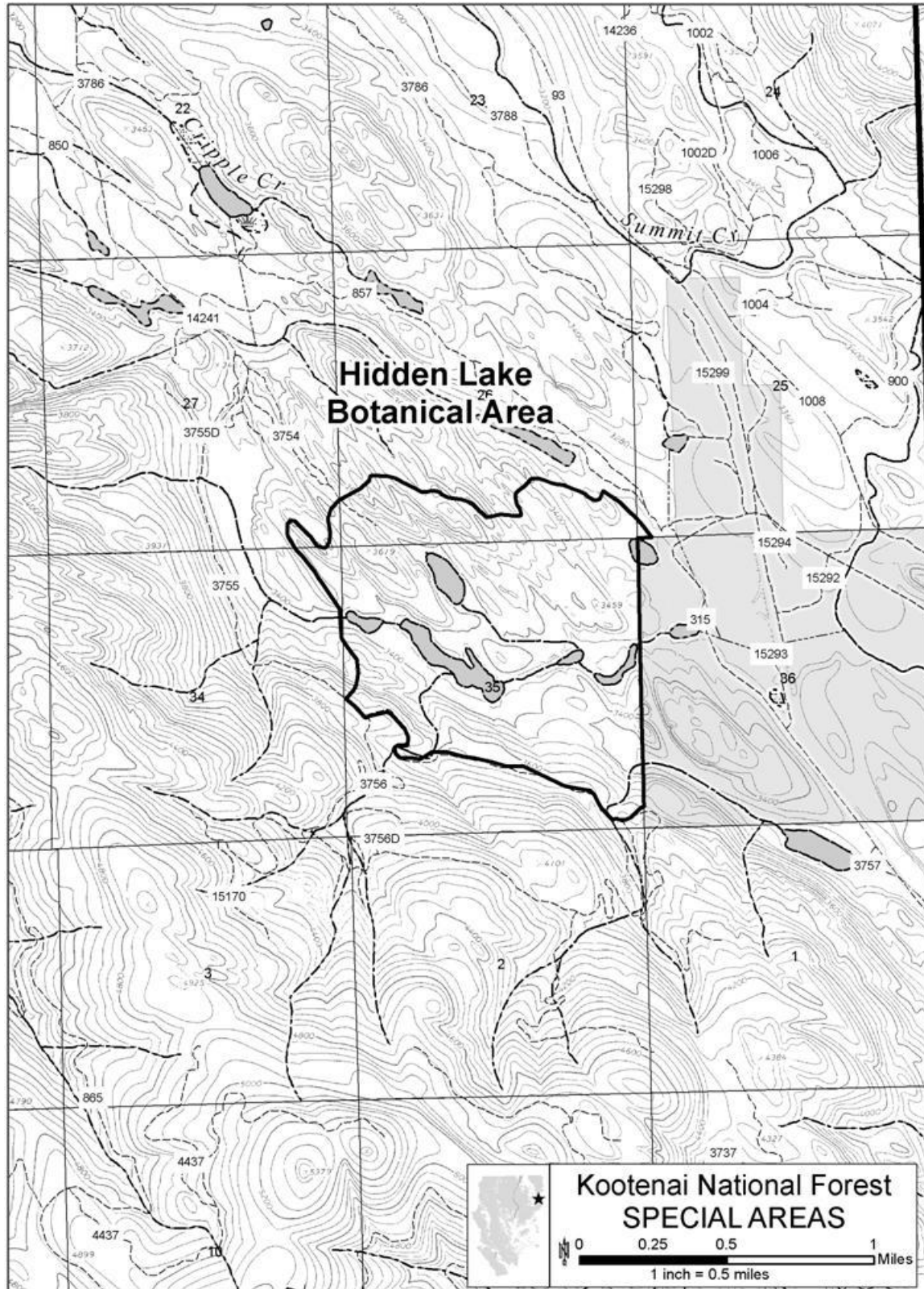


Figure 21. Hidden Lake Botanical Area

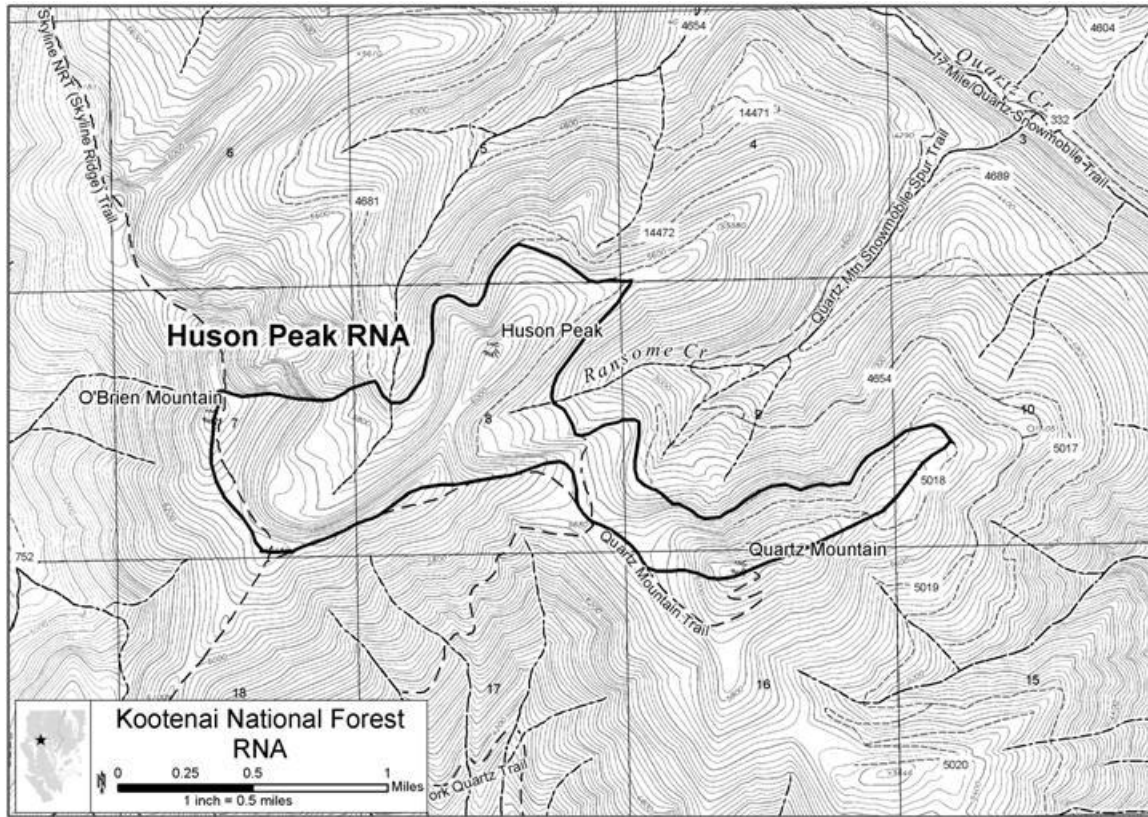


Figure 22. Huson Peak RNA

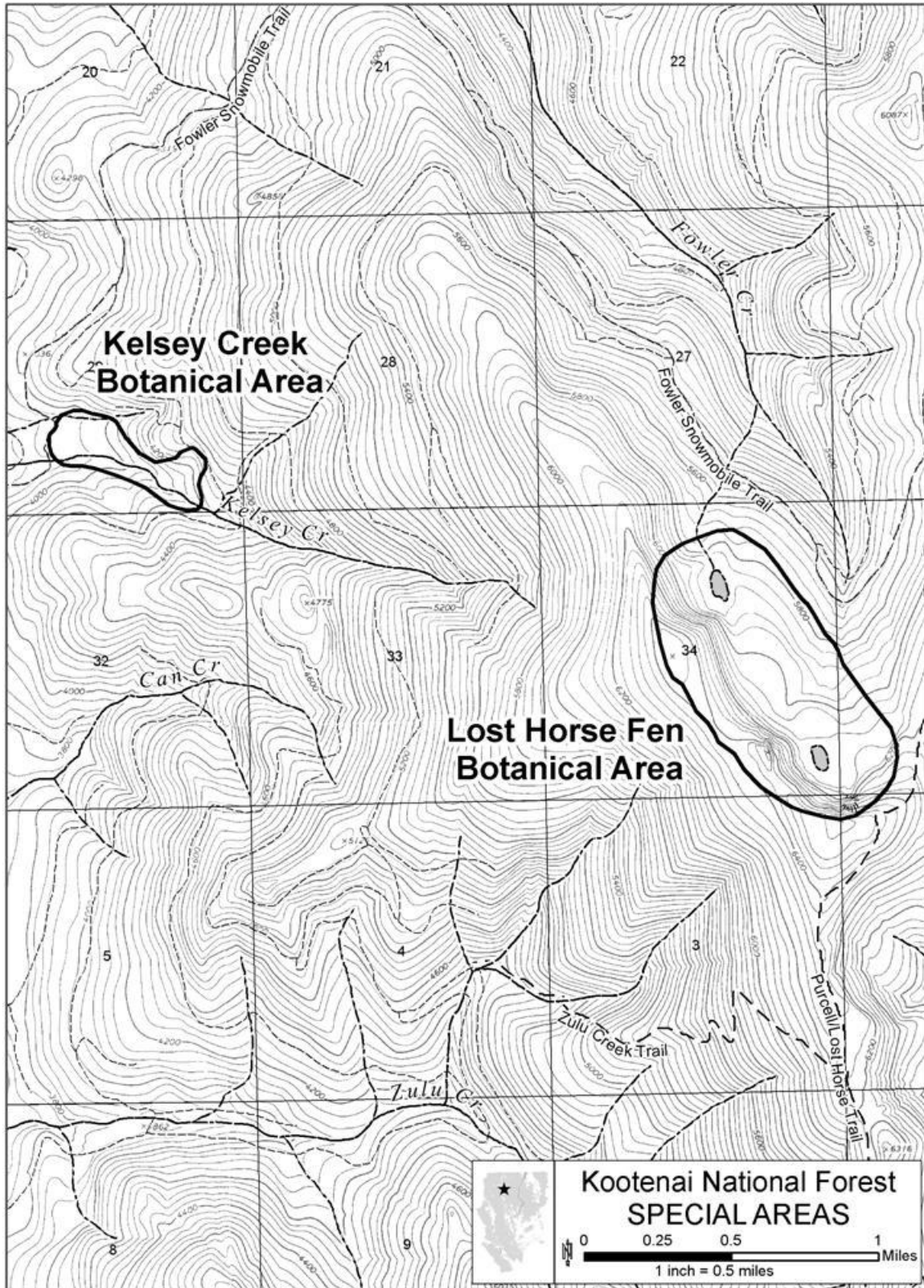


Figure 23. Kelsey Creek Botanical Area/Lost Horse Fen Botanical Area

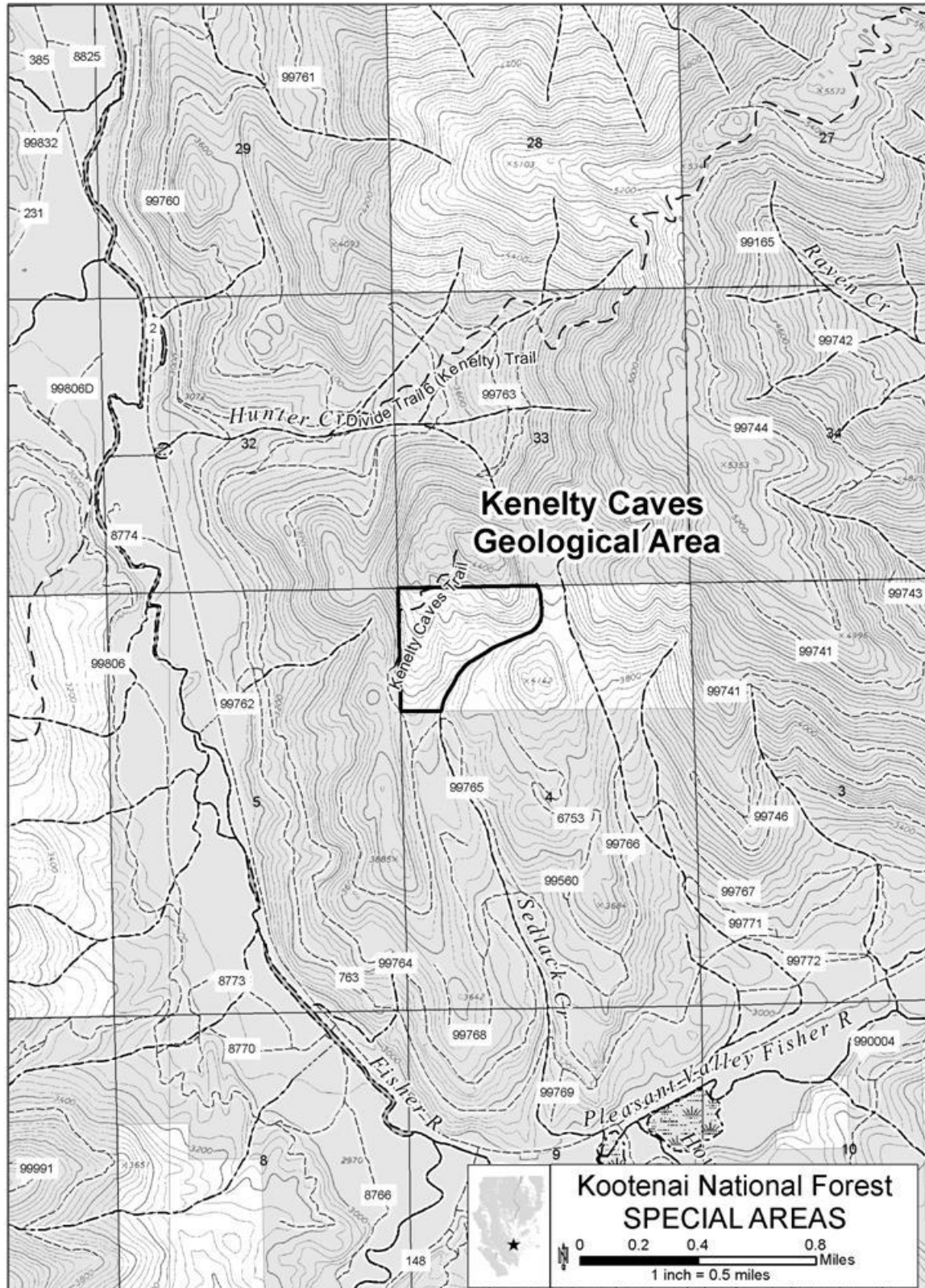


Figure 24. Kenelty Caves Geological Area

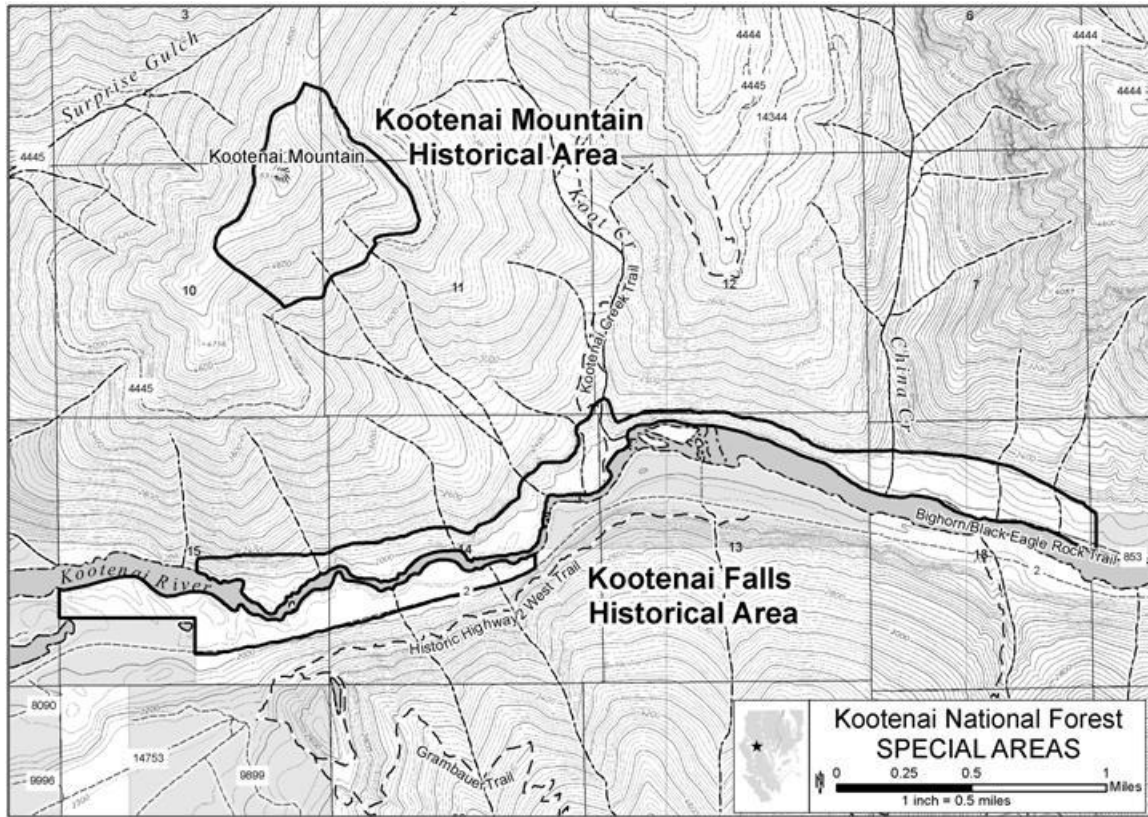


Figure 25. Kootenai Mountain Historical Area/ Kootenai Falls Historical Area

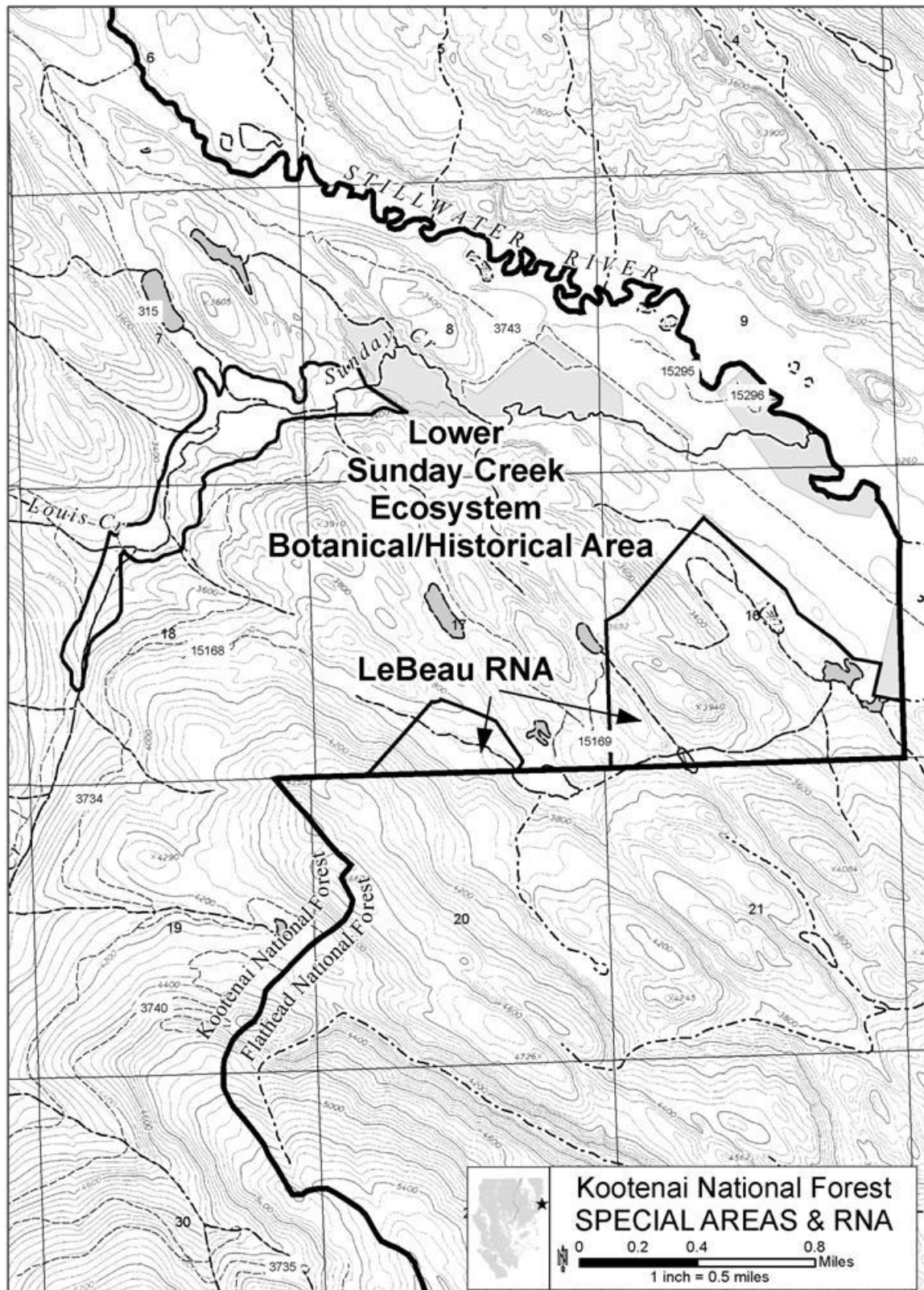


Figure 26. Lower Sunday Cr. Ecosystem Botanical/Historical Area/LeBeau RNA

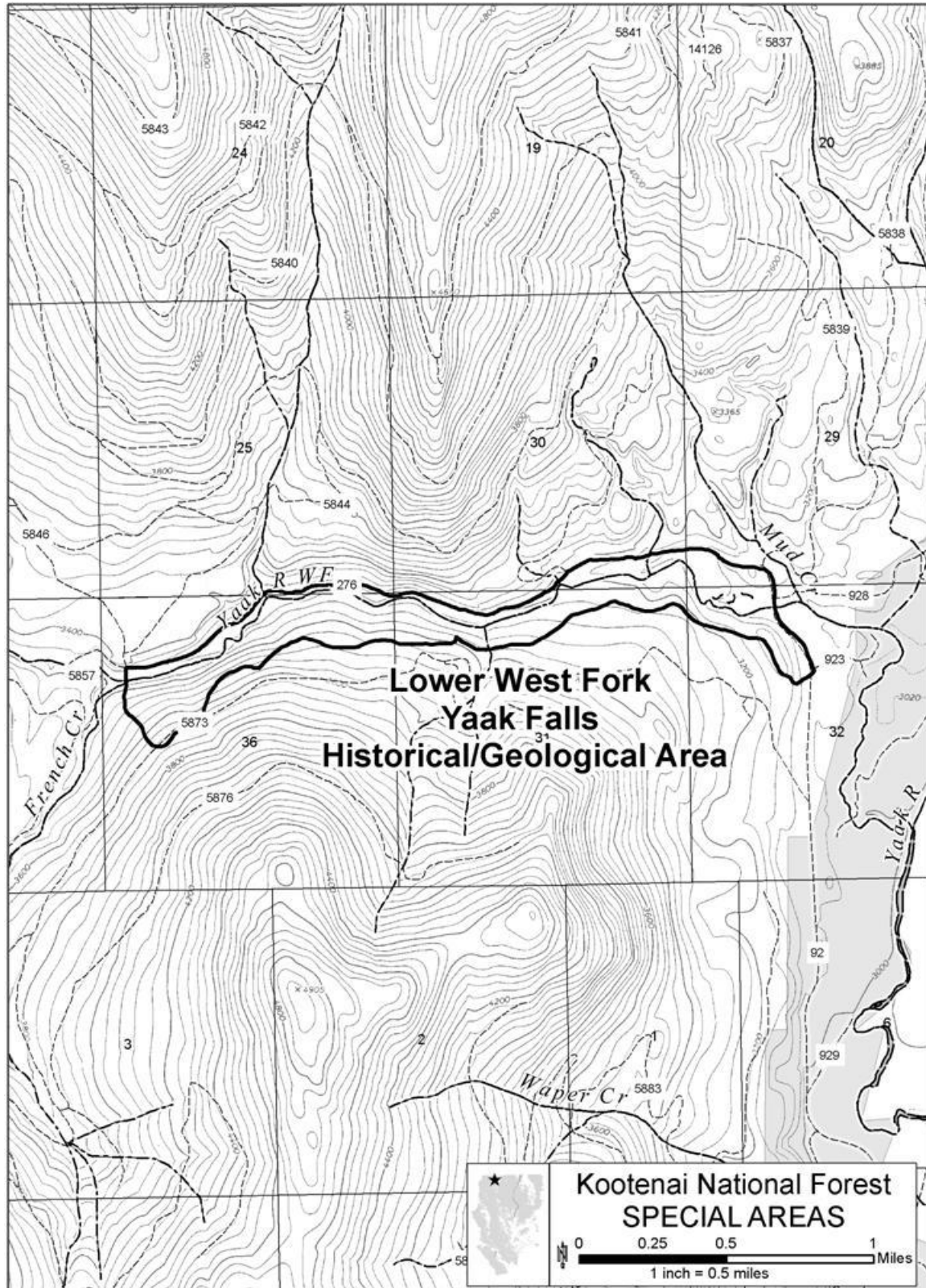


Figure 27. Lower W. F. Yaak Falls Historical / Geological Area

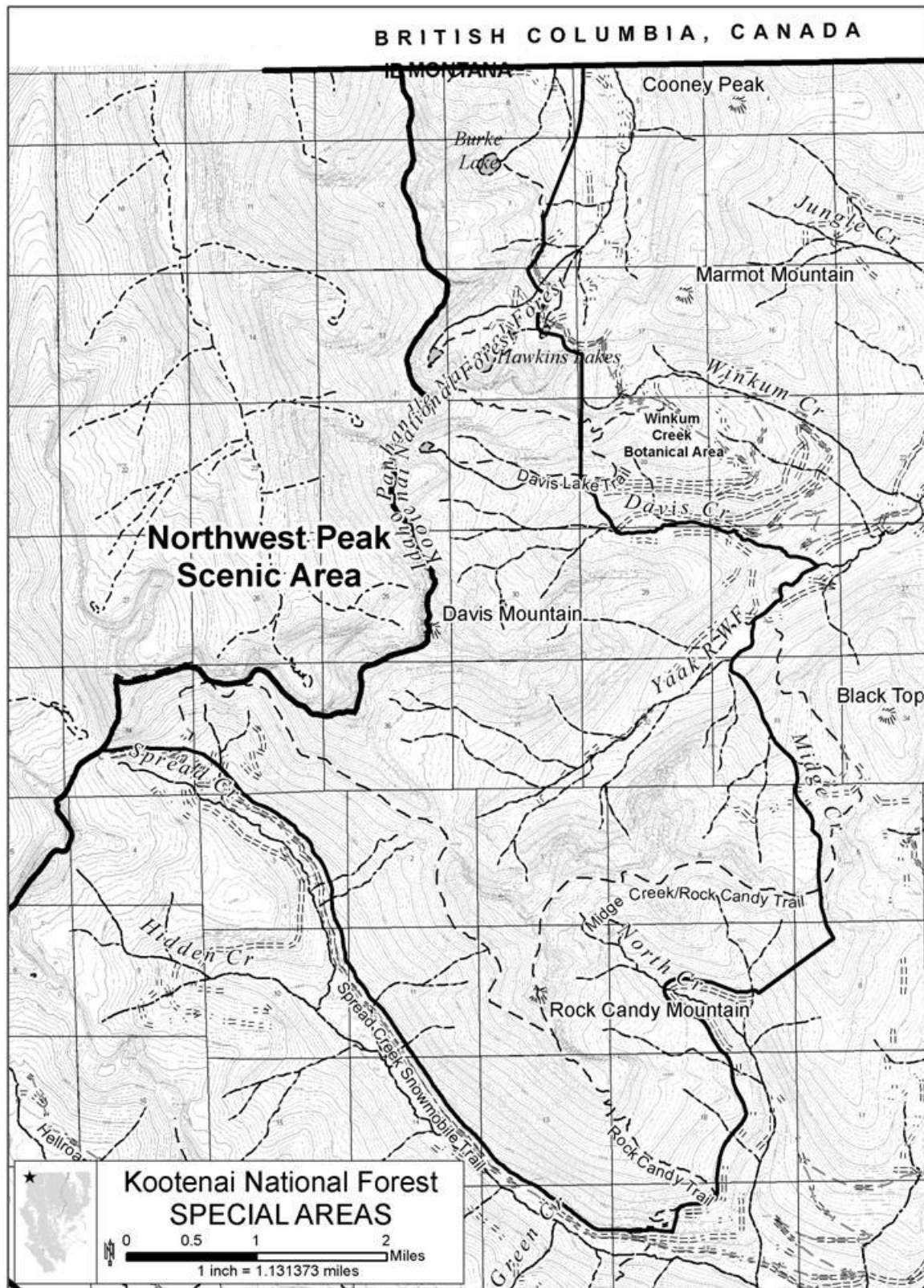


Figure 28. Northwest Peak Scenic Area

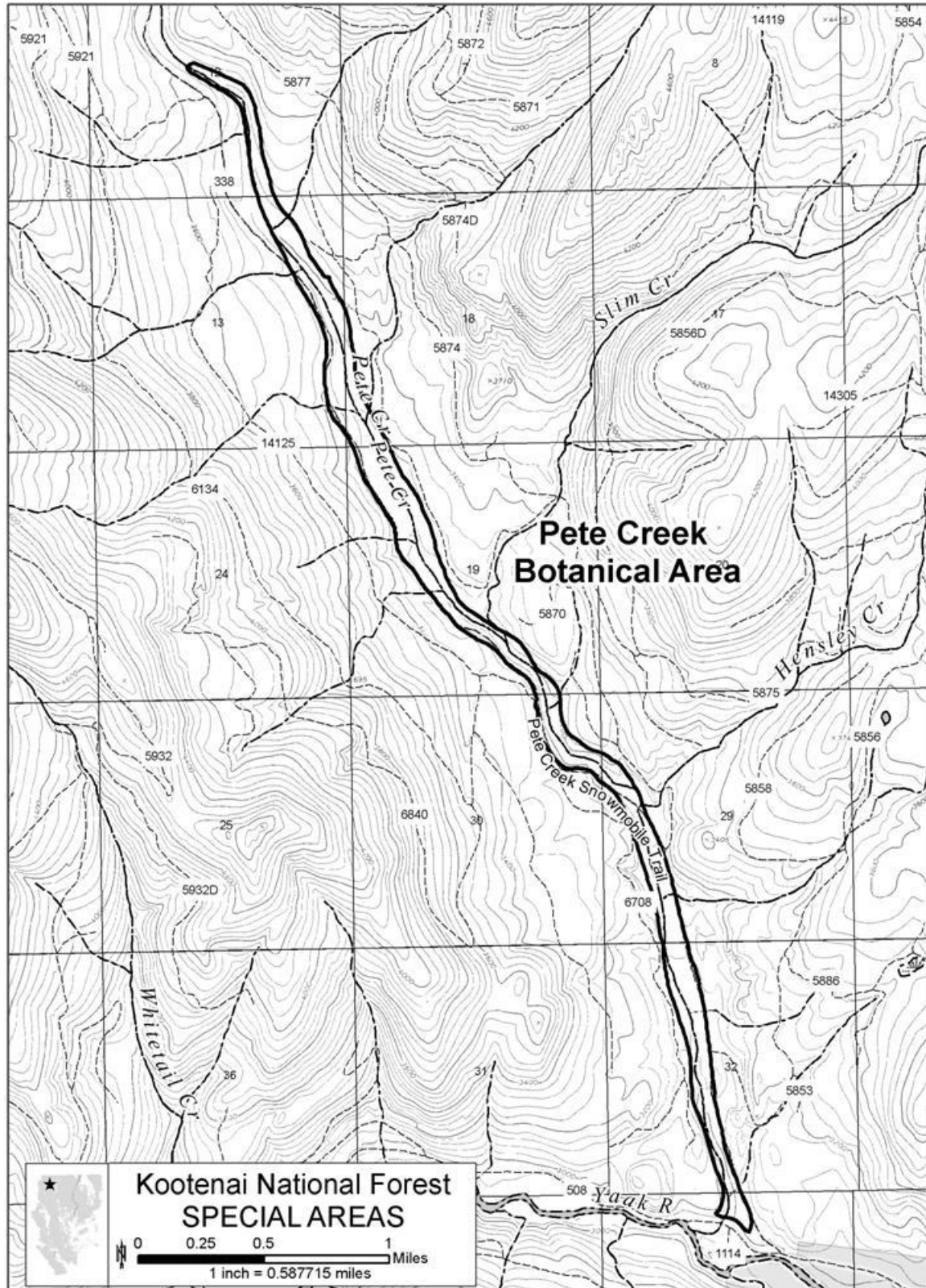


Figure 29. Pete Creek Botanical Area

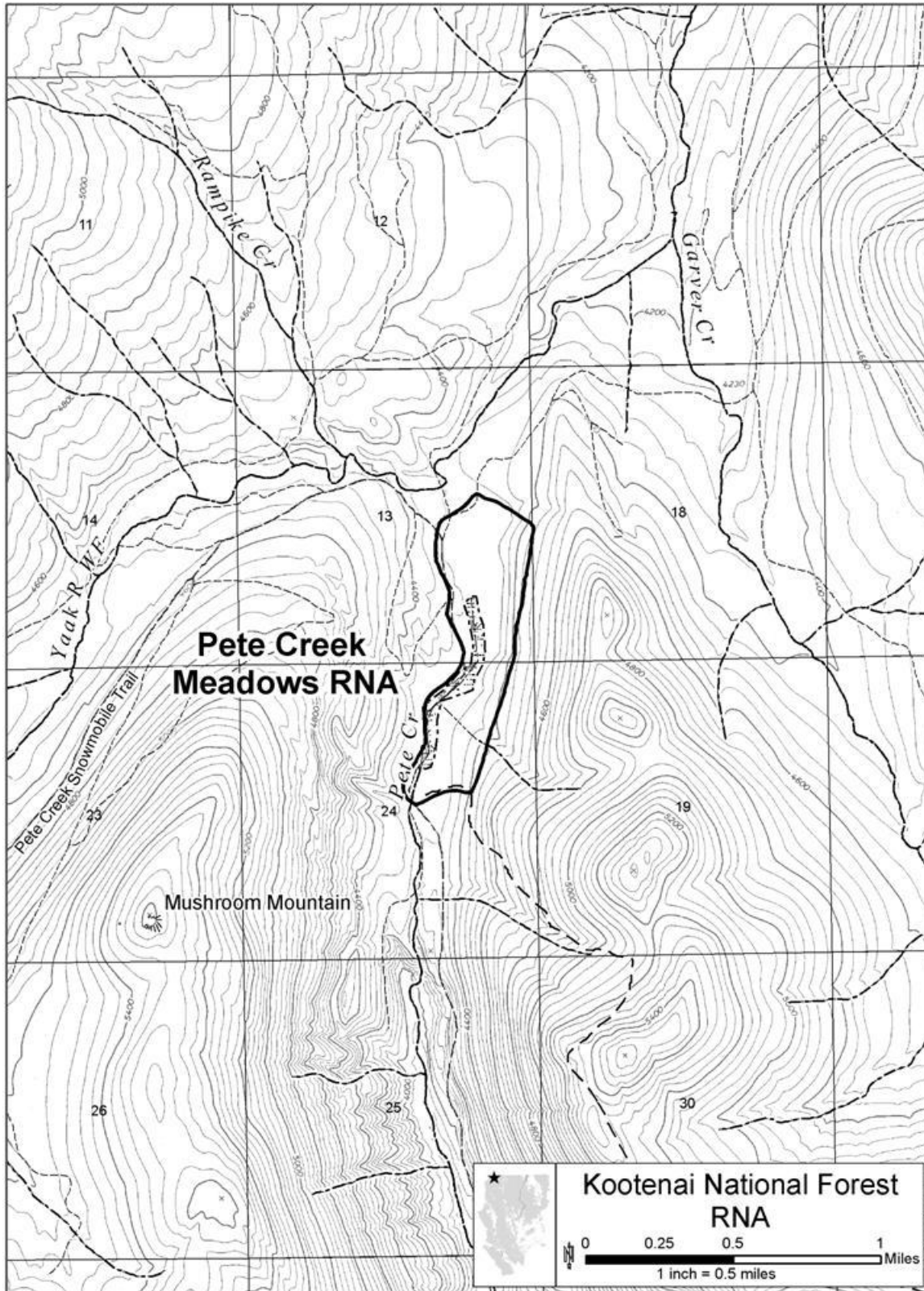


Figure 30. Pete Creek Meadows RNA



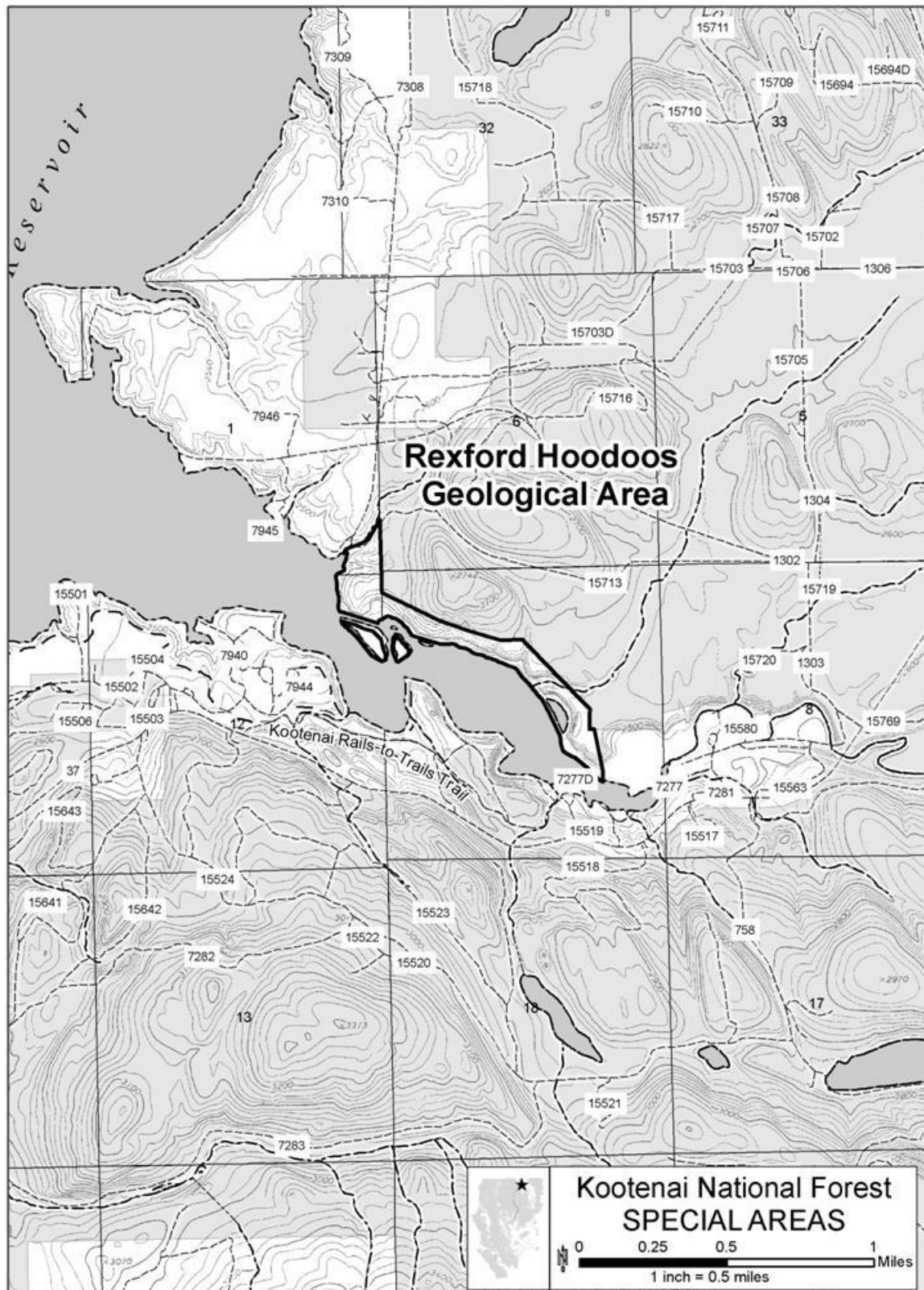


Figure 32. Rexford Hoodoos Geological Area

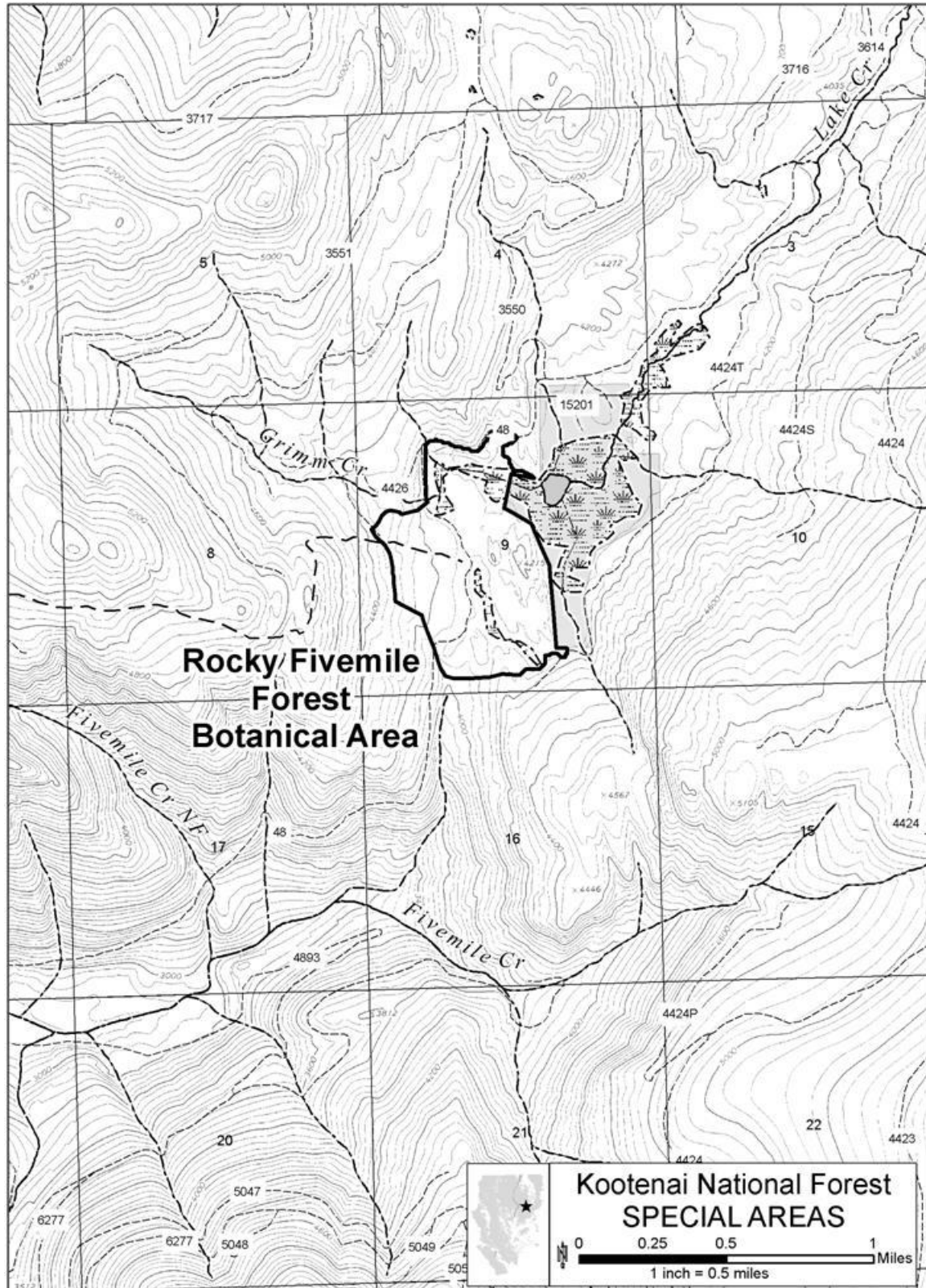


Figure 33. Rocky Fivemile Forest Botanical Area

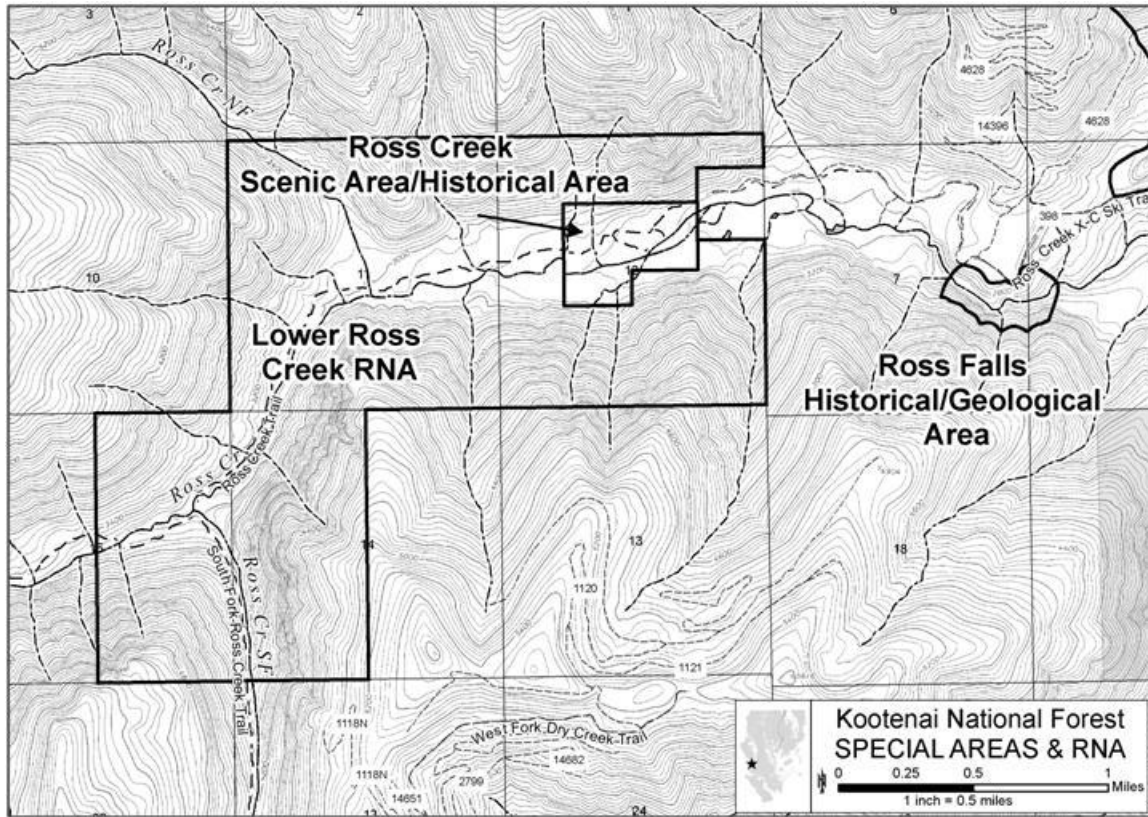


Figure 34. Ross Falls Historical/Geological Area/Ross Creek Scenic Area/Historical Area/Lower Ross Creek RNA

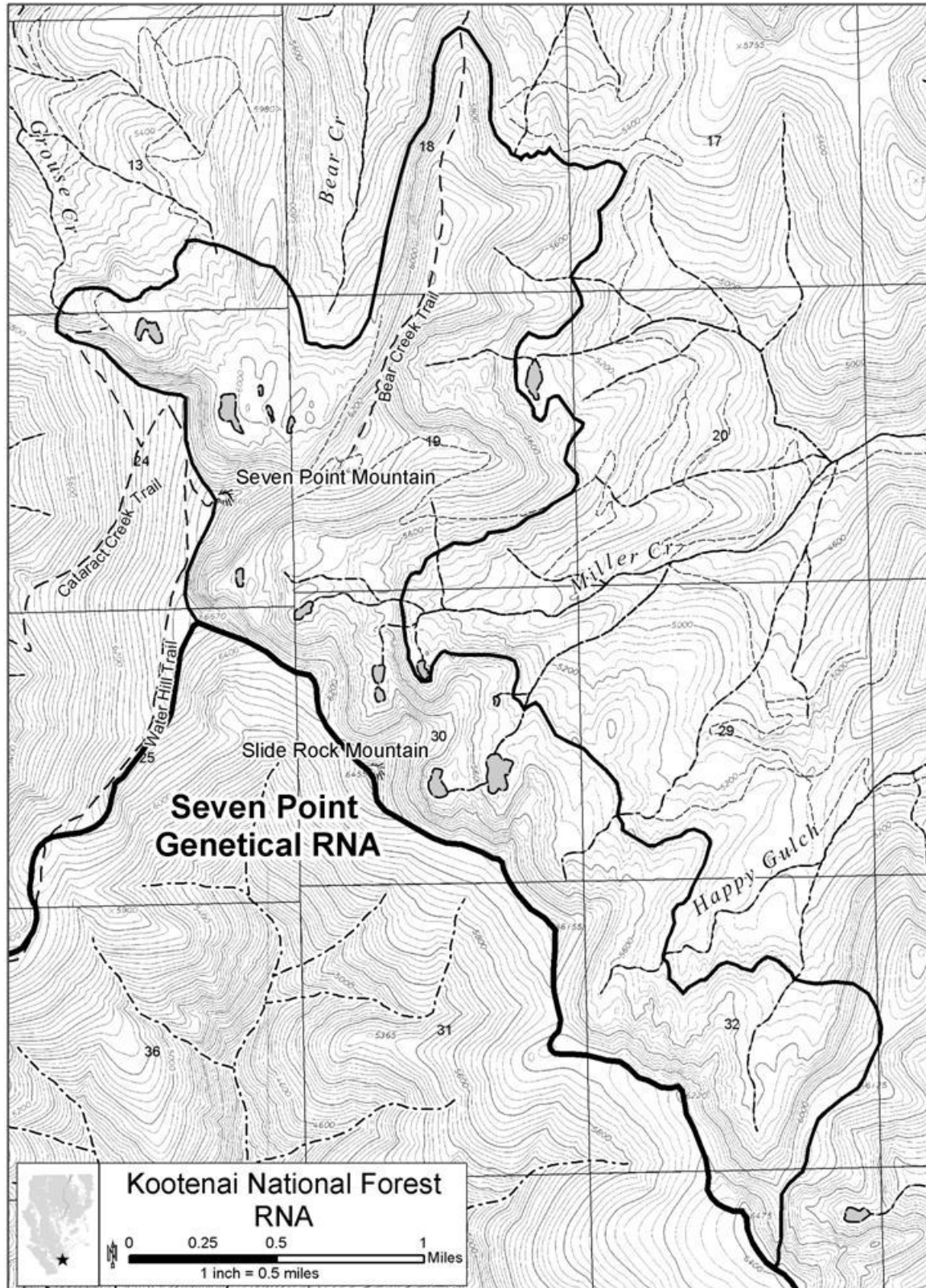


Figure 35. Seven Point Genetical RNA

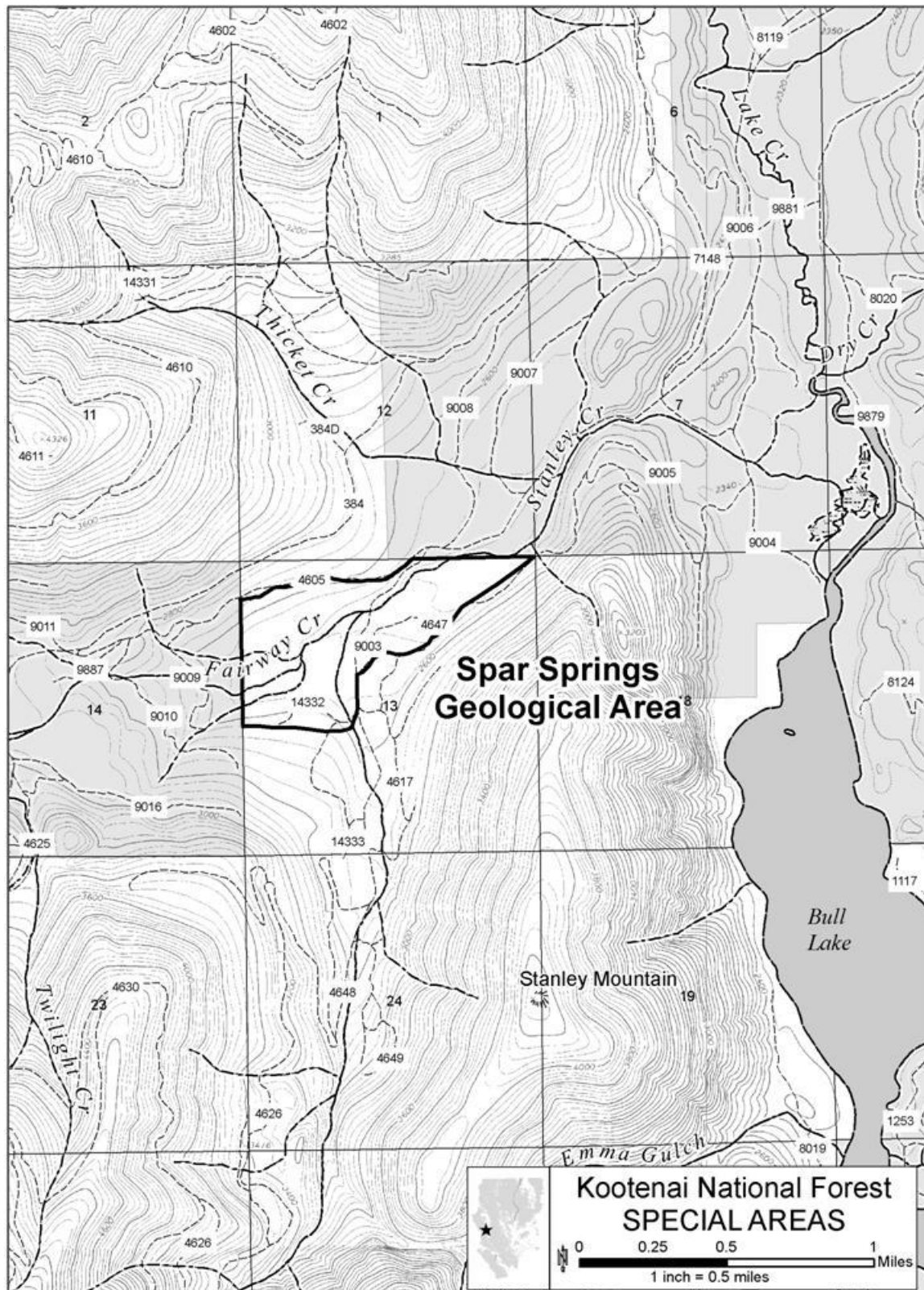


Figure 36. Spar Springs Geological Area

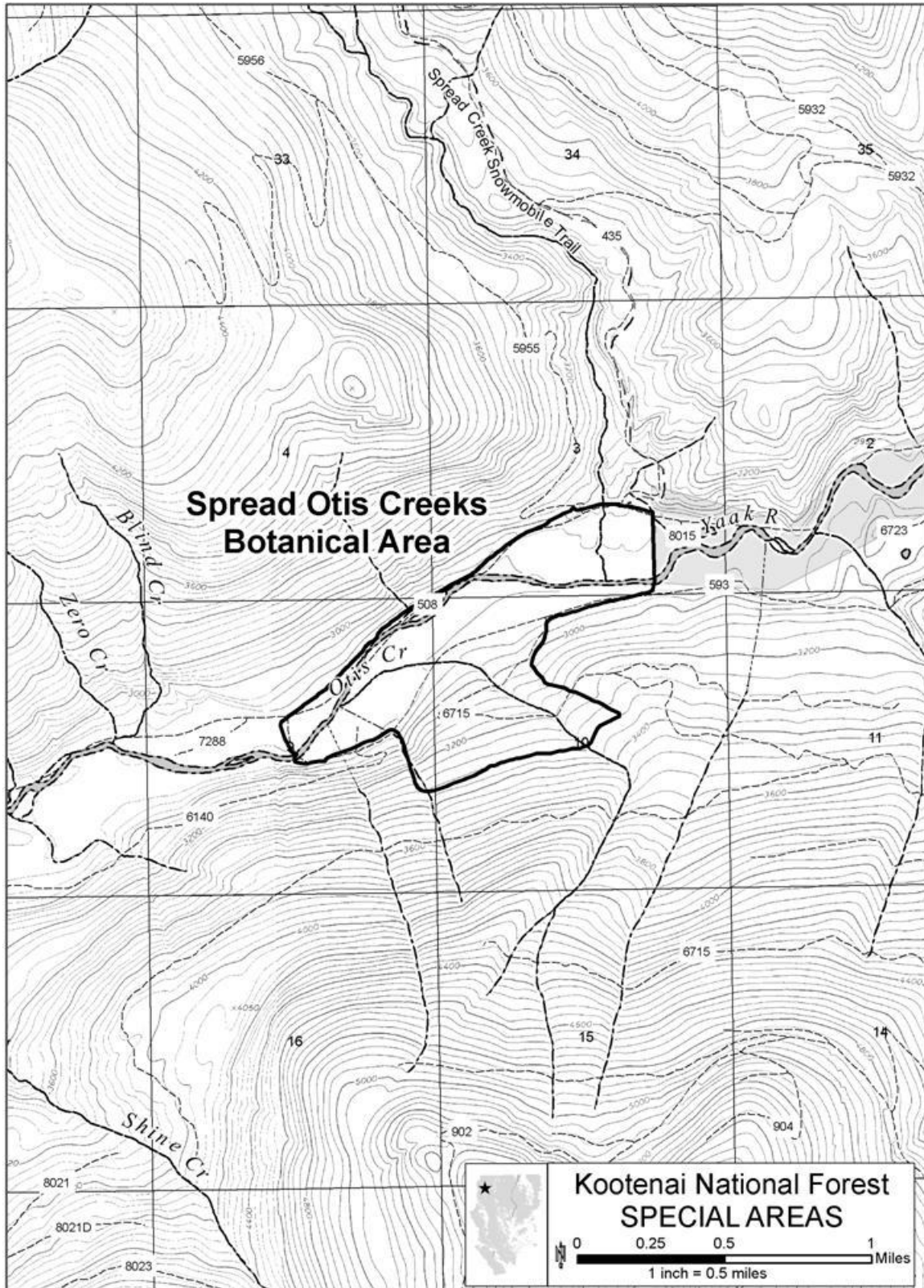


Figure 37. Spread Otis Creeks Botanical Area

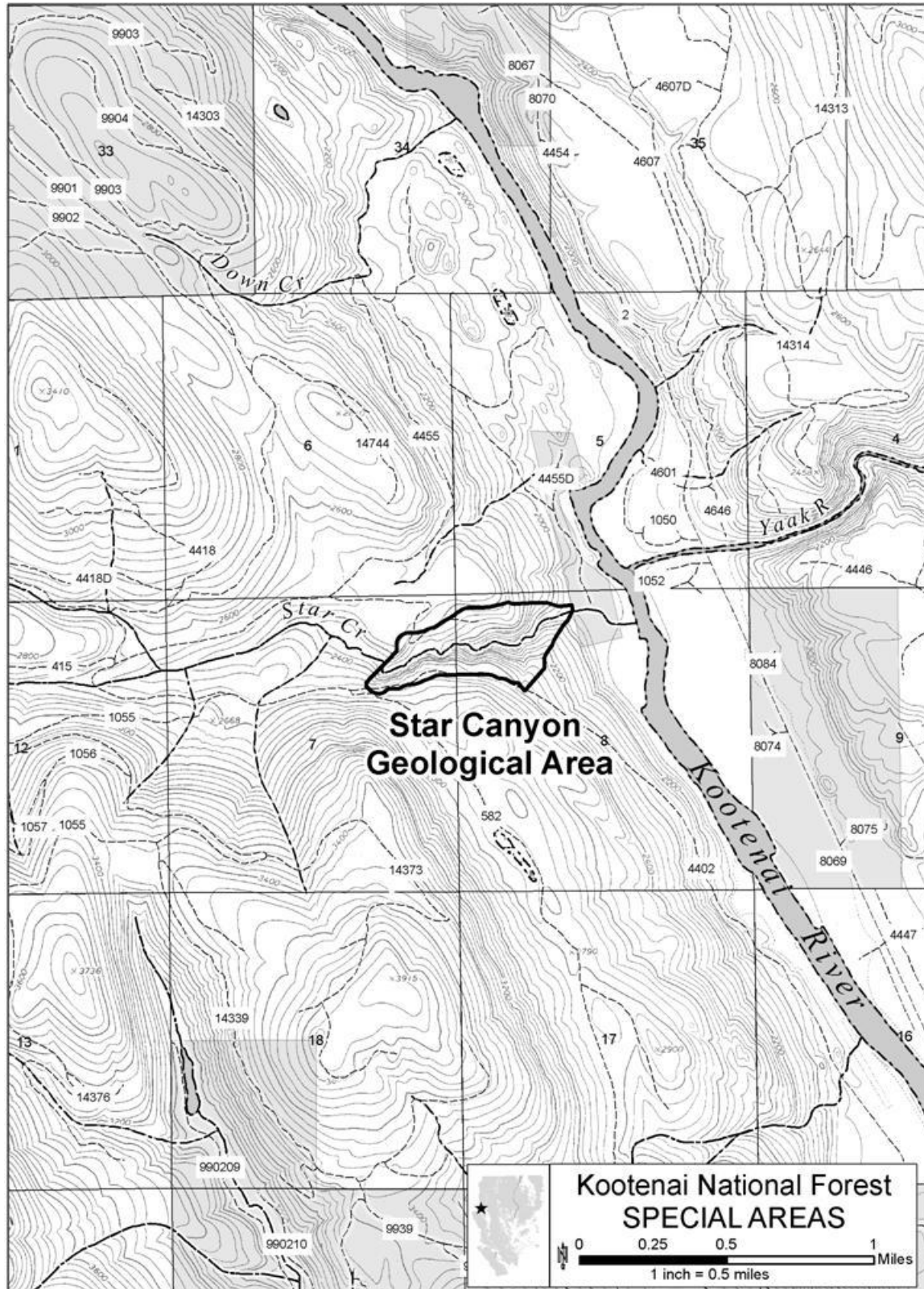


Figure 38. Star Canyon Geological Area

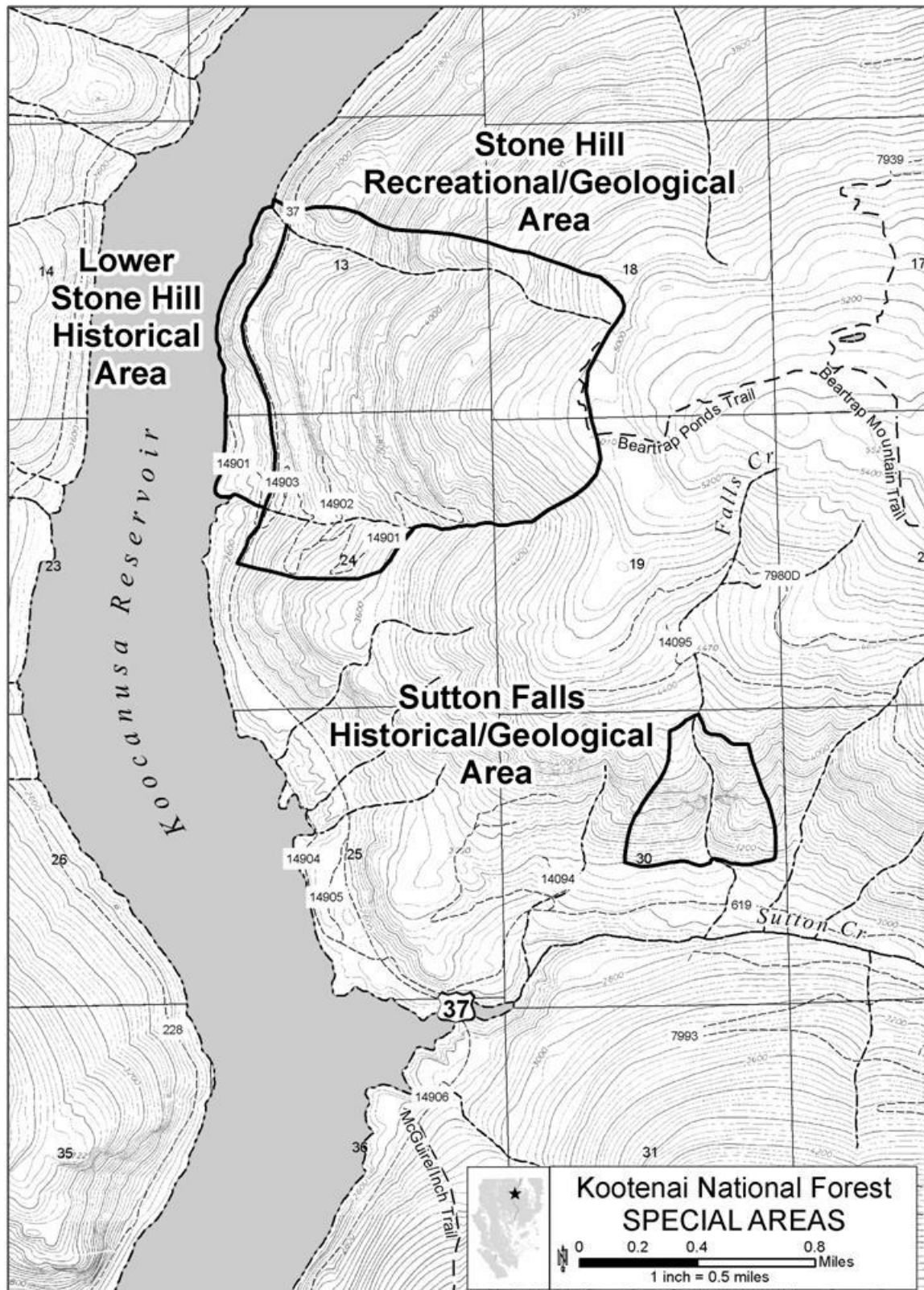


Figure 39. Stone Hill Recreational/Geological Area/Sutton Falls Historical/Geological Area/Lower Stone Hill Historical Area

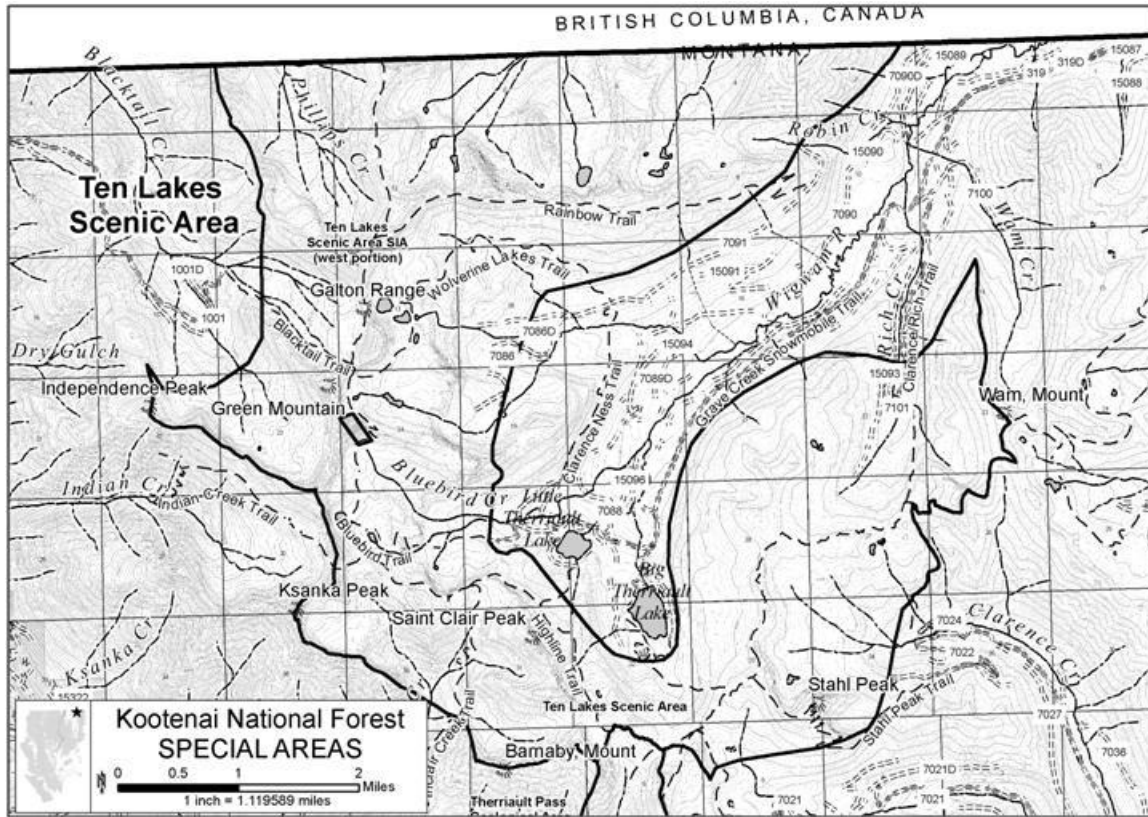


Figure 40. Ten Lakes Scenic Area

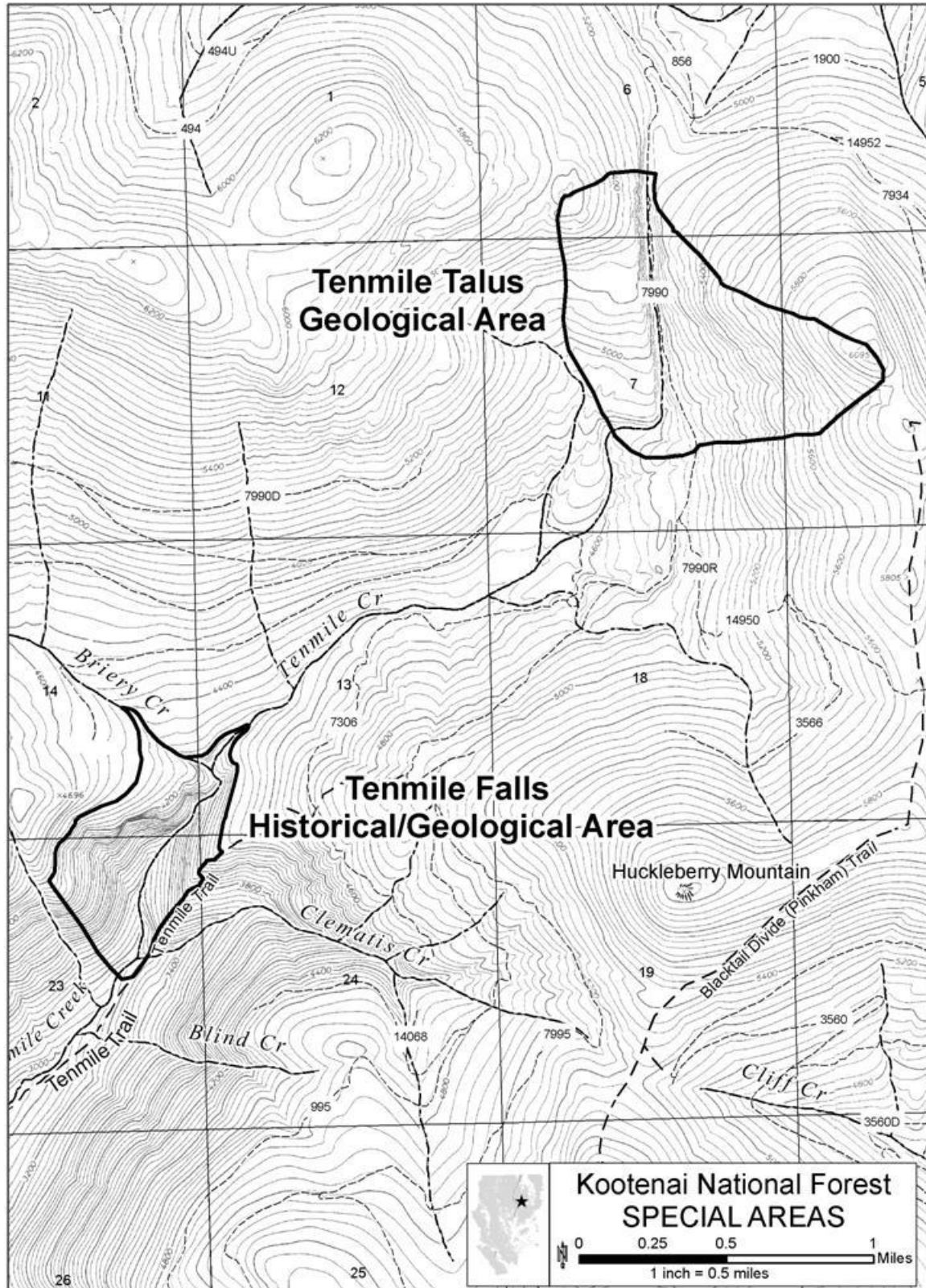


Figure 41. Tenmile Falls Historical/Geological Area/Tenmile Talus Geological Area

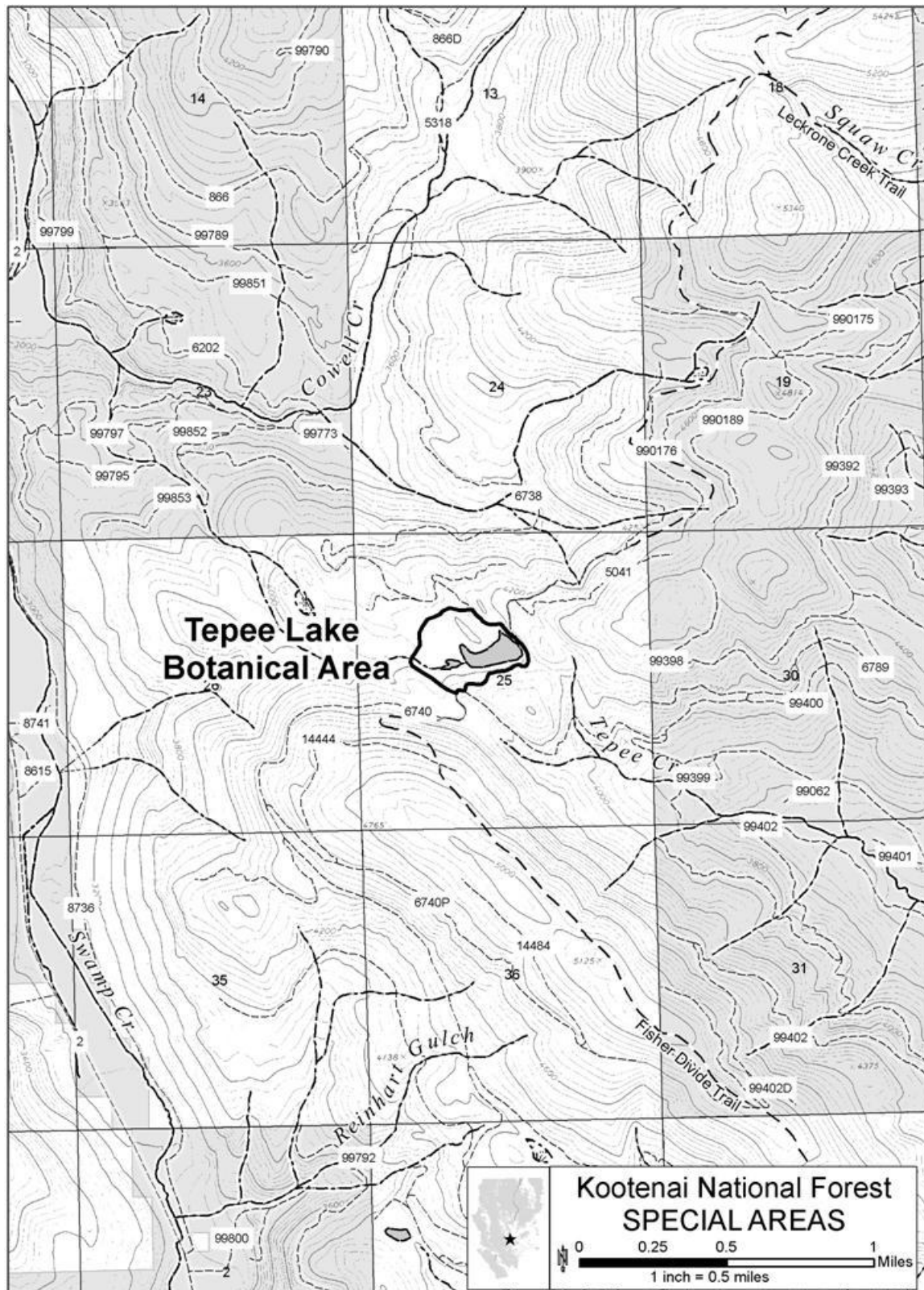


Figure 42. Tepee Lake Botanical Area

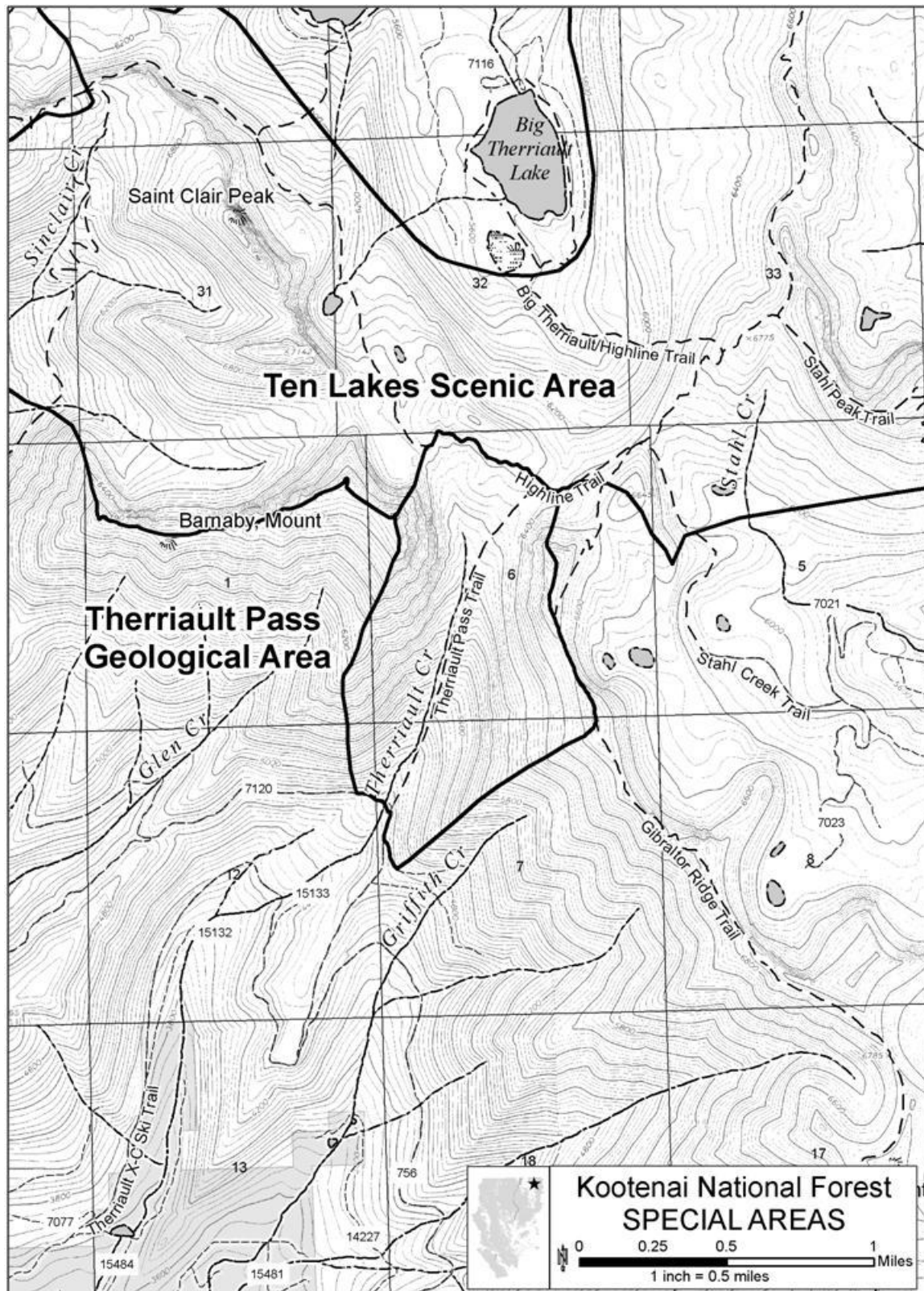


Figure 43. Therriault Pass Geological Area

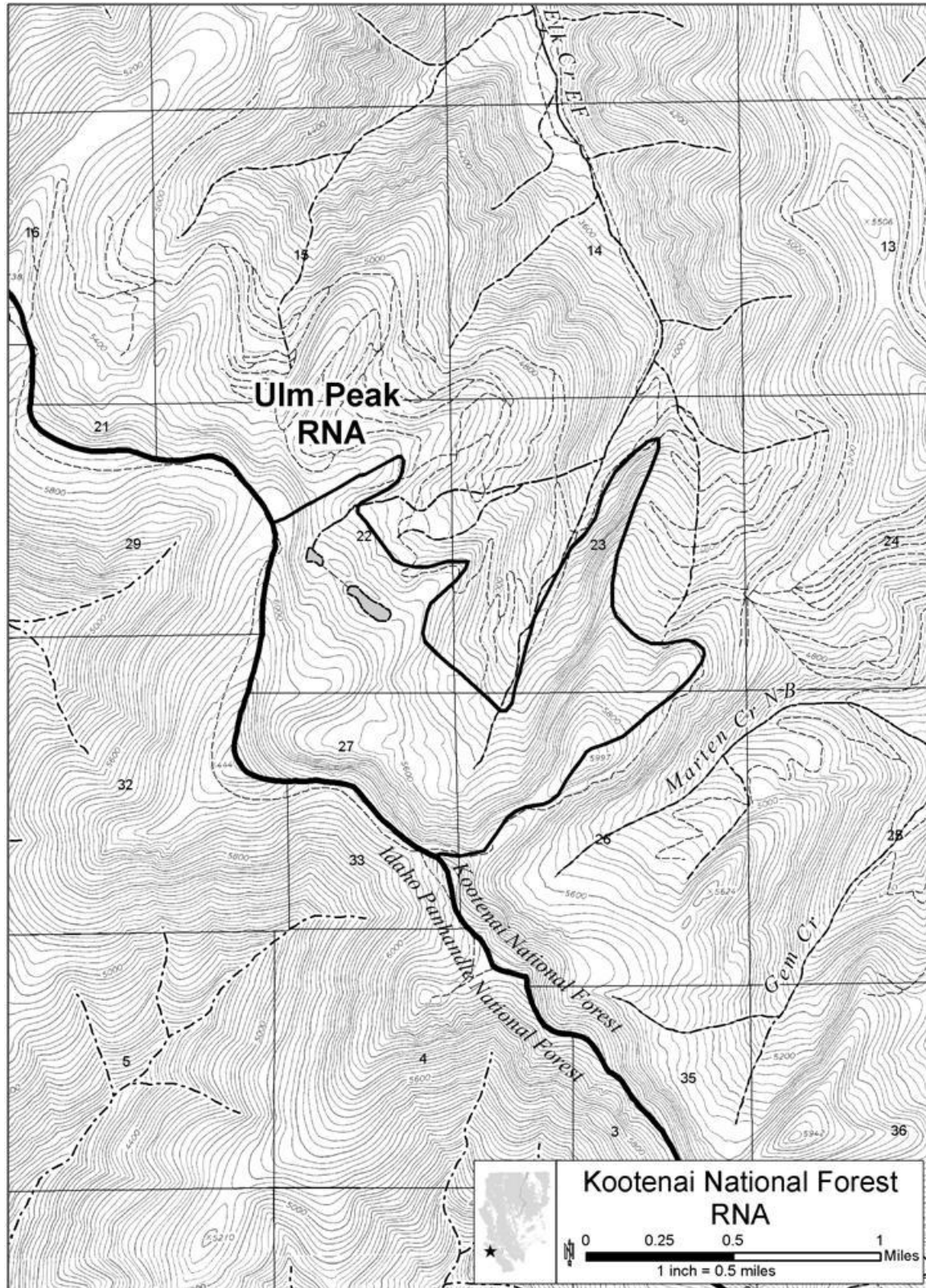


Figure 44. Ulm Peak RNA

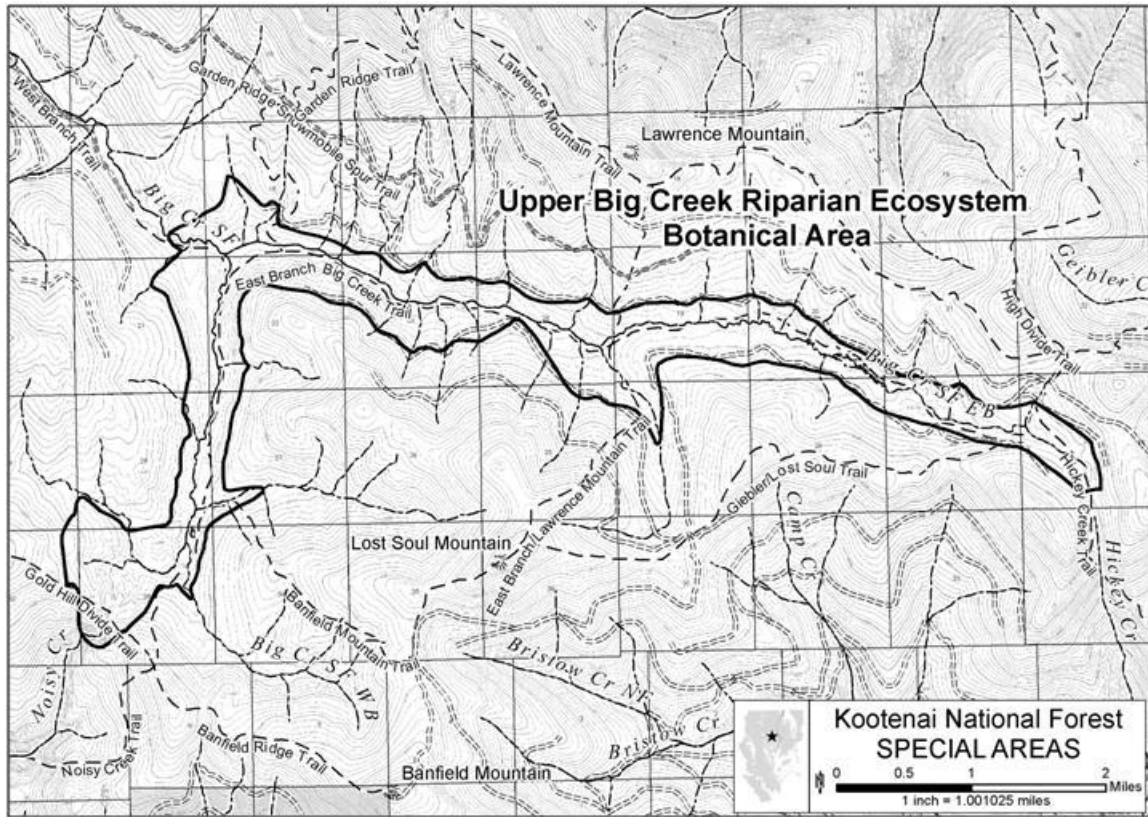


Figure 45. Upper Big Creek Riparian Ecosystem Botanical Area

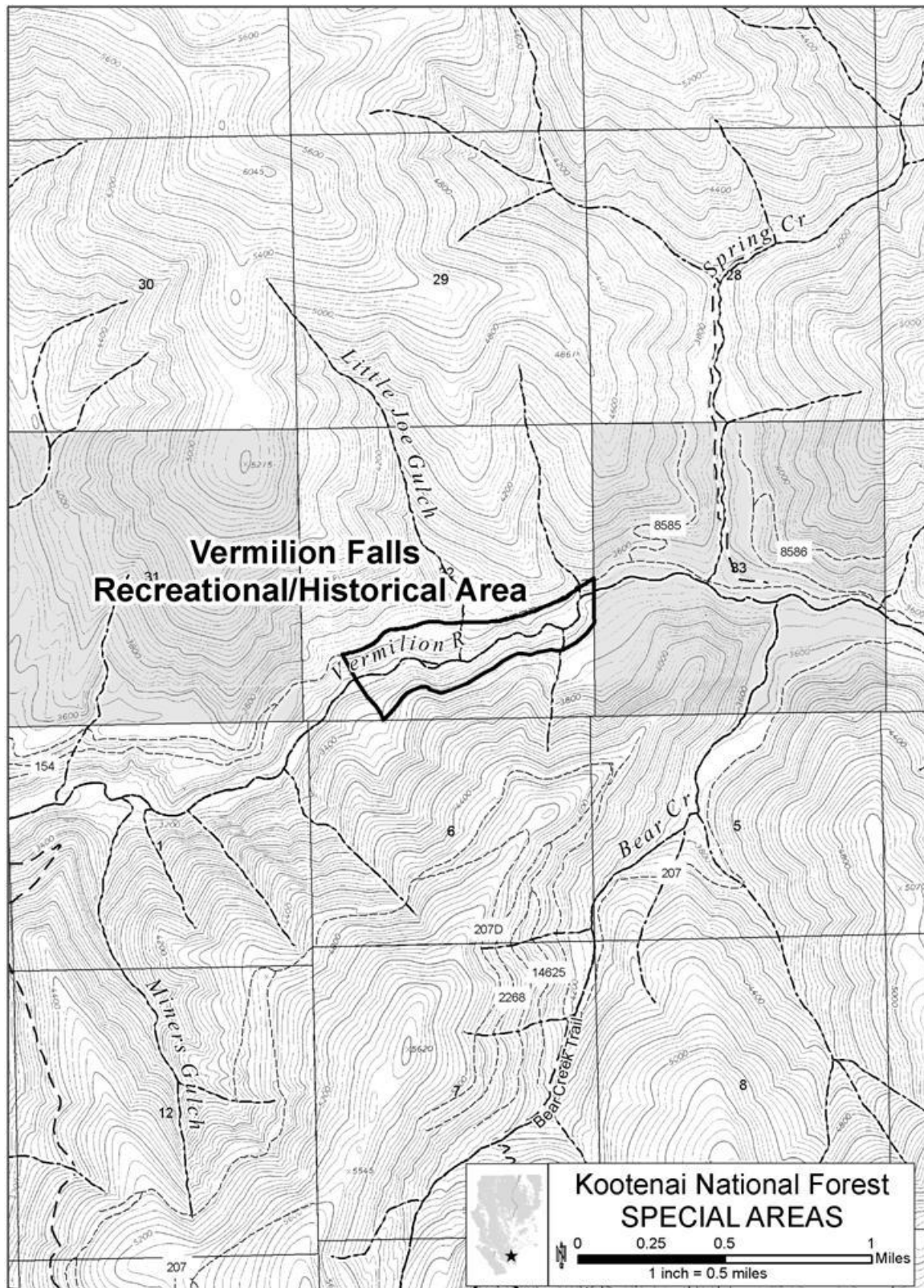


Figure 46. Vermilion Falls Recreational/Historical Area

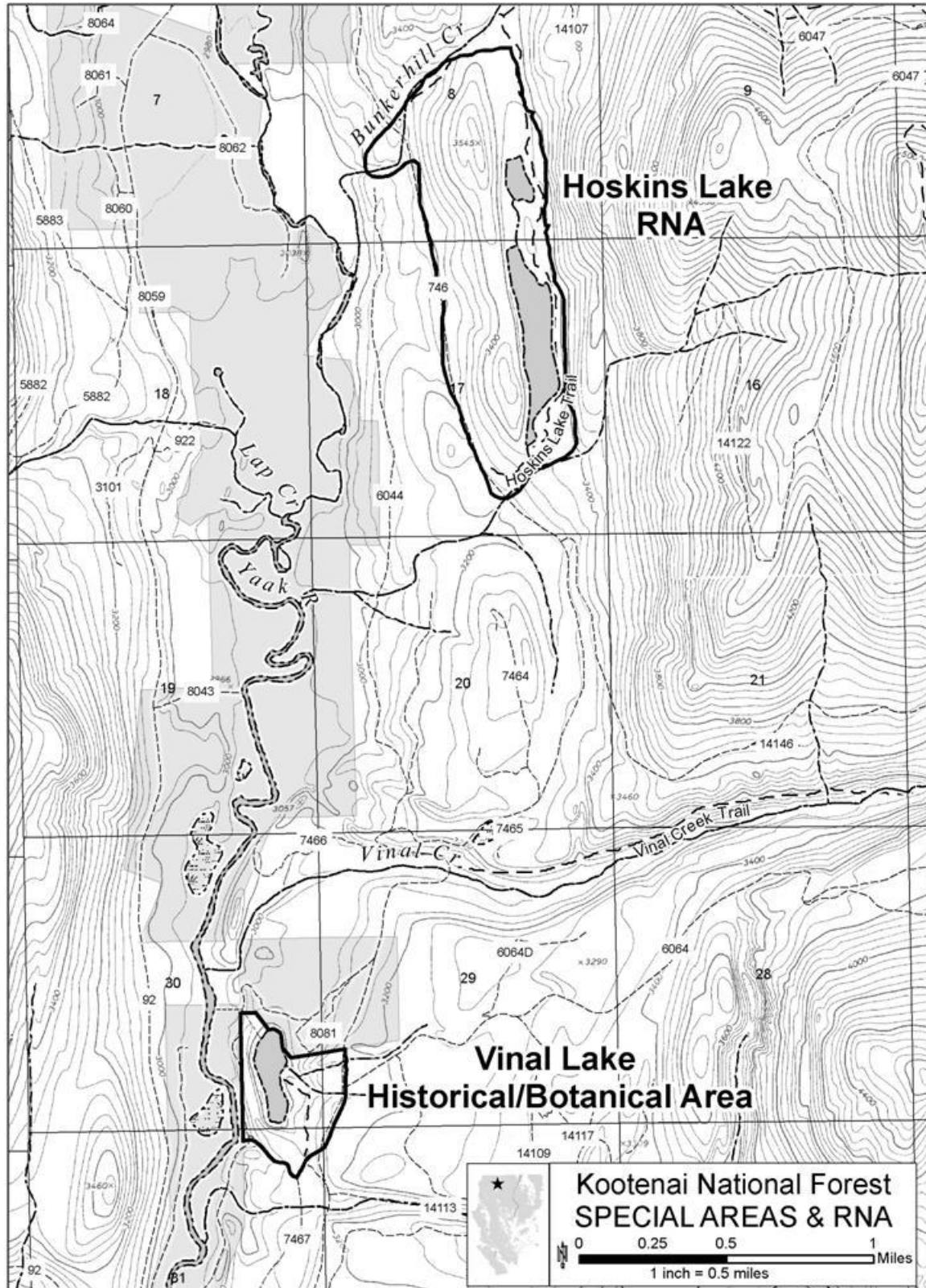


Figure 47. Vinal Lake Historical/Botanical Area/Hoskins Lake RNA

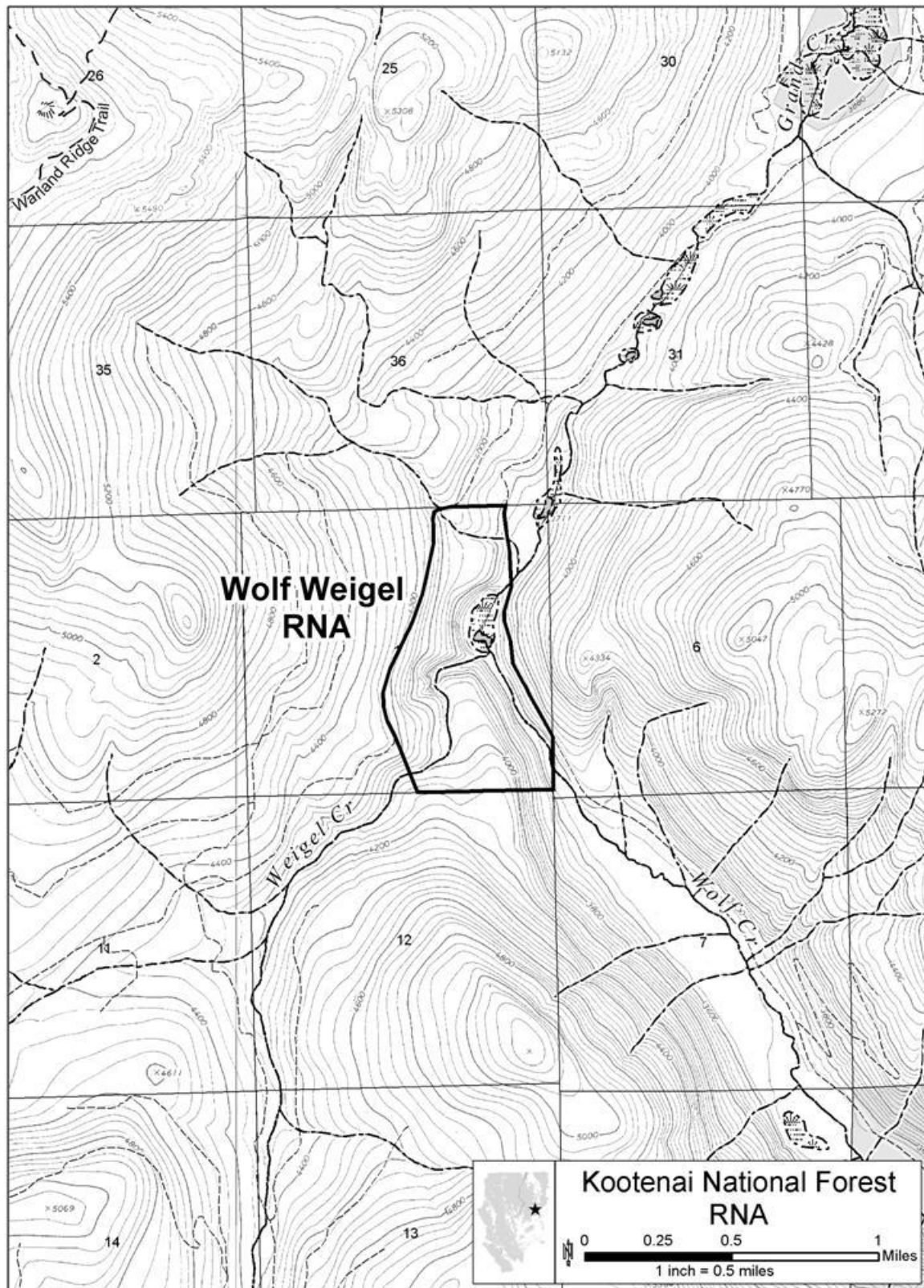


Figure 48. Wolf Weigel RNA

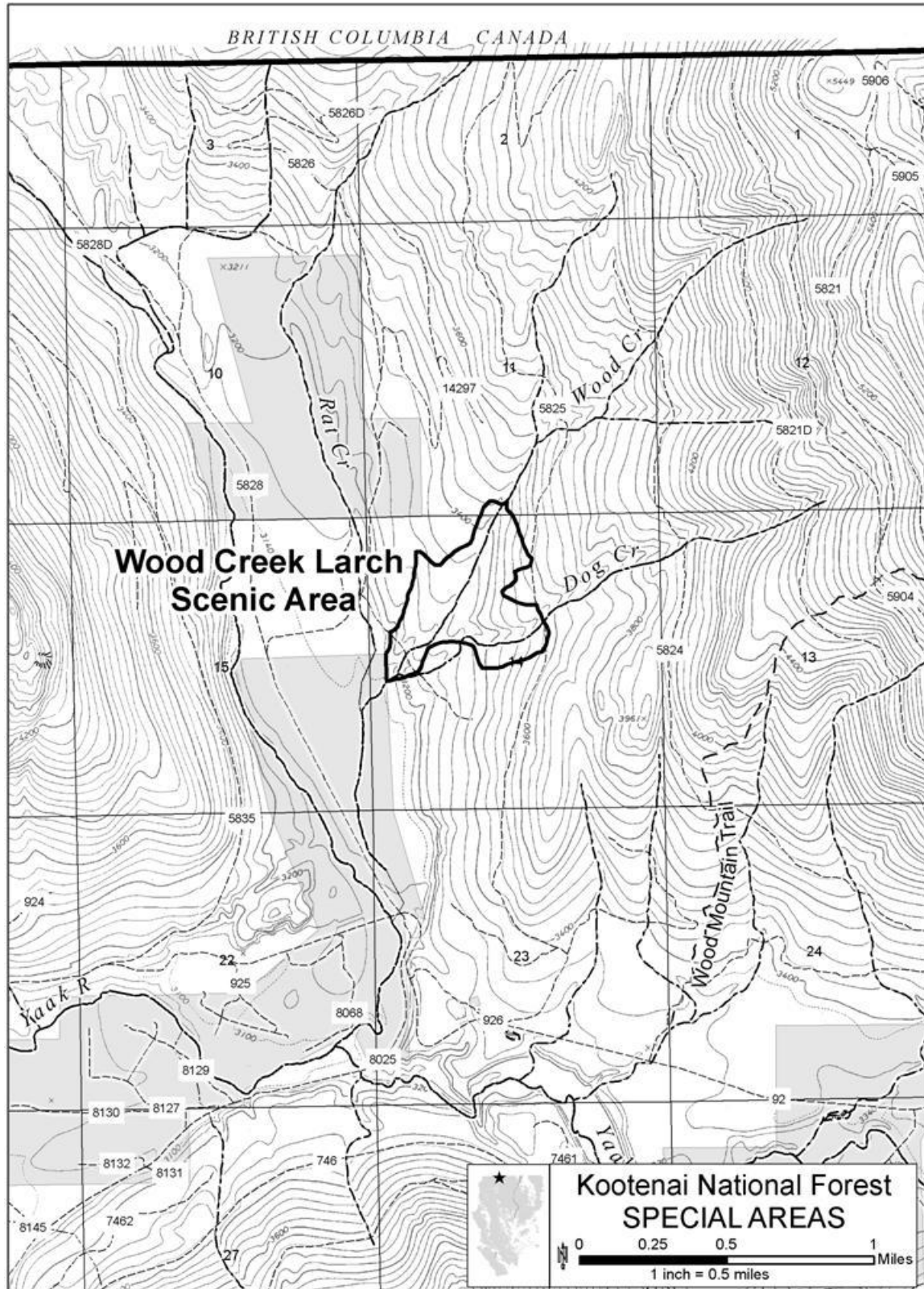


Figure 49. Wood Creek Larch Scenic Area

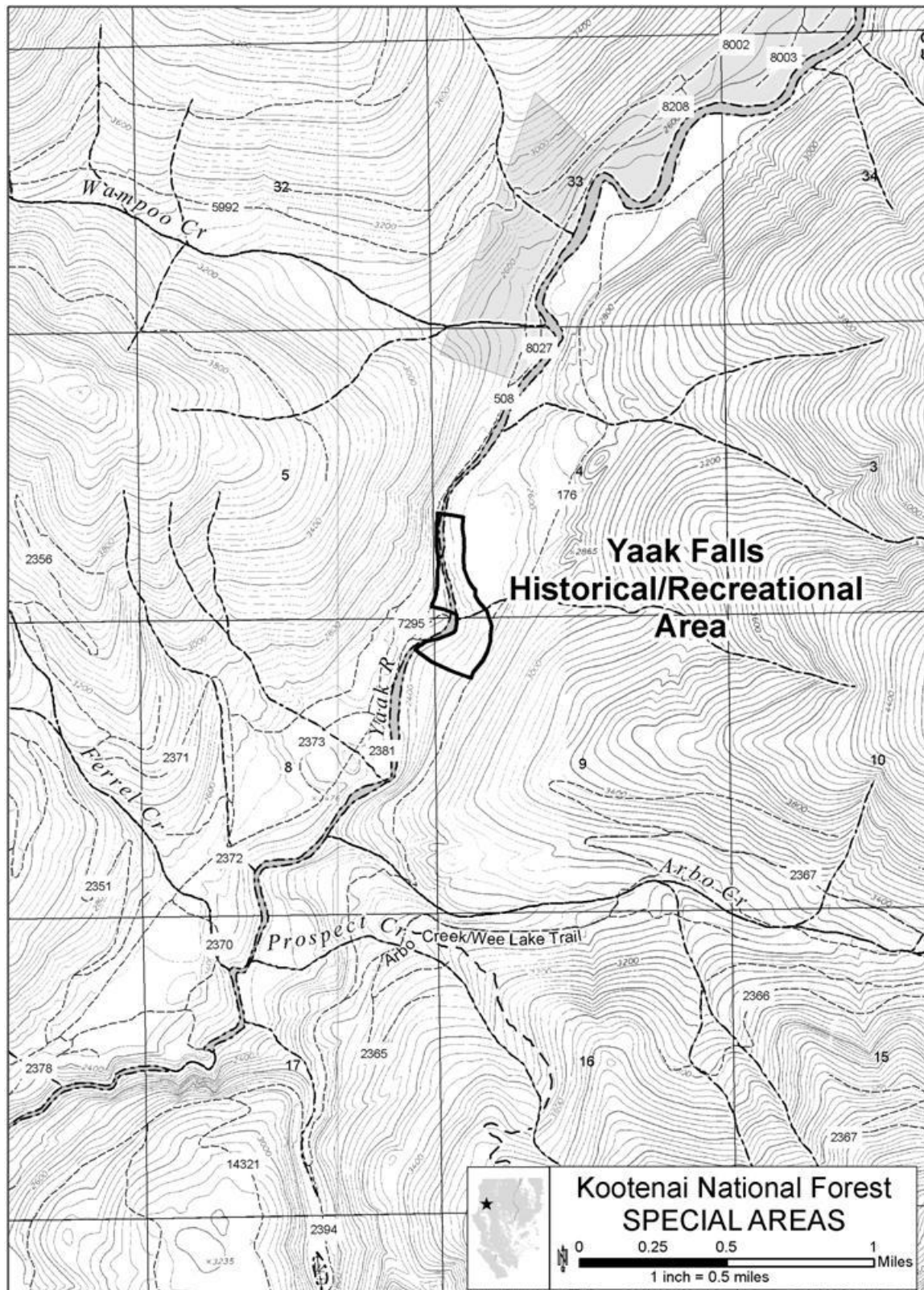


Figure 50. Yaak Falls Historical/Recreational Area

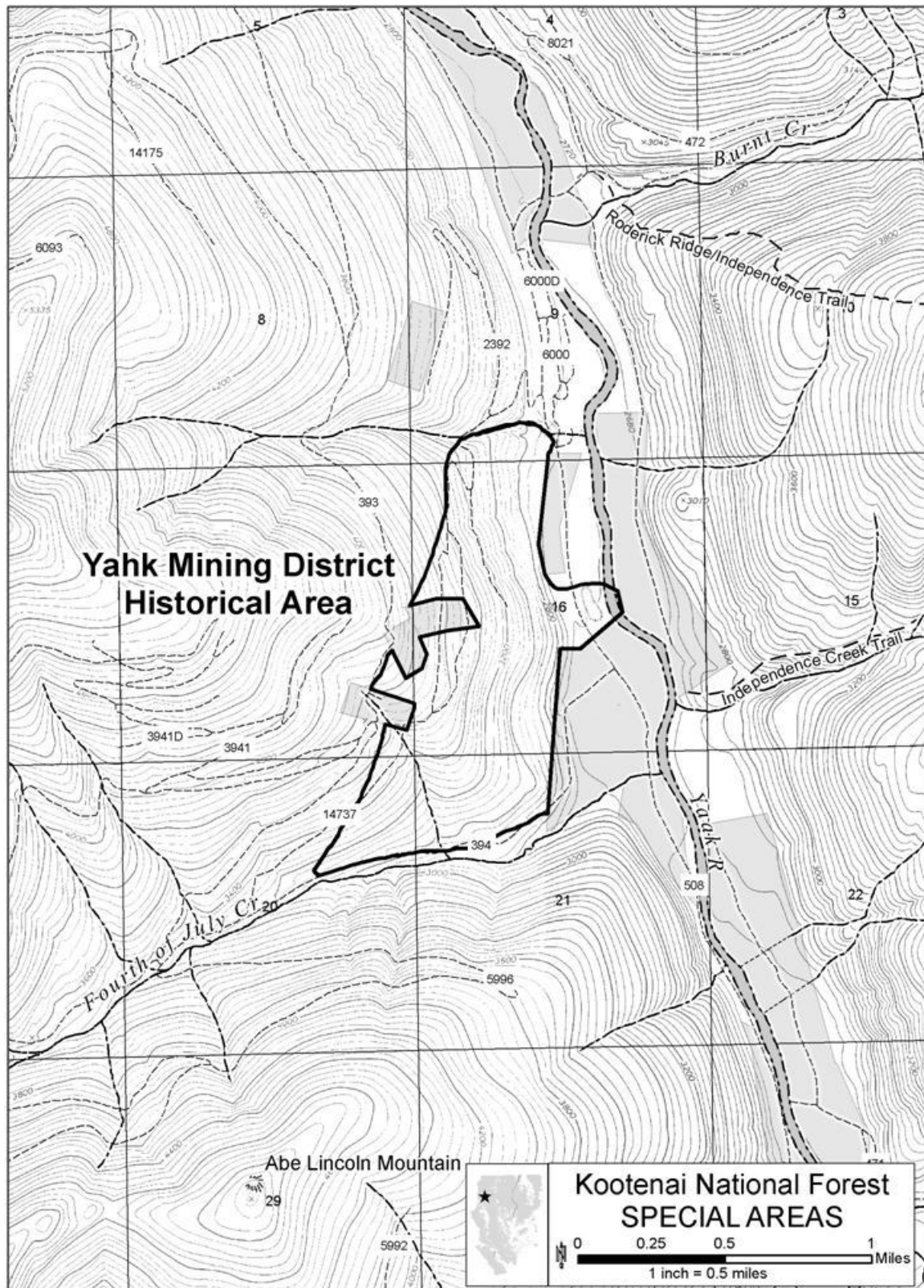


Figure 51. Yahk Mining District Historical Area